SERV. 8429

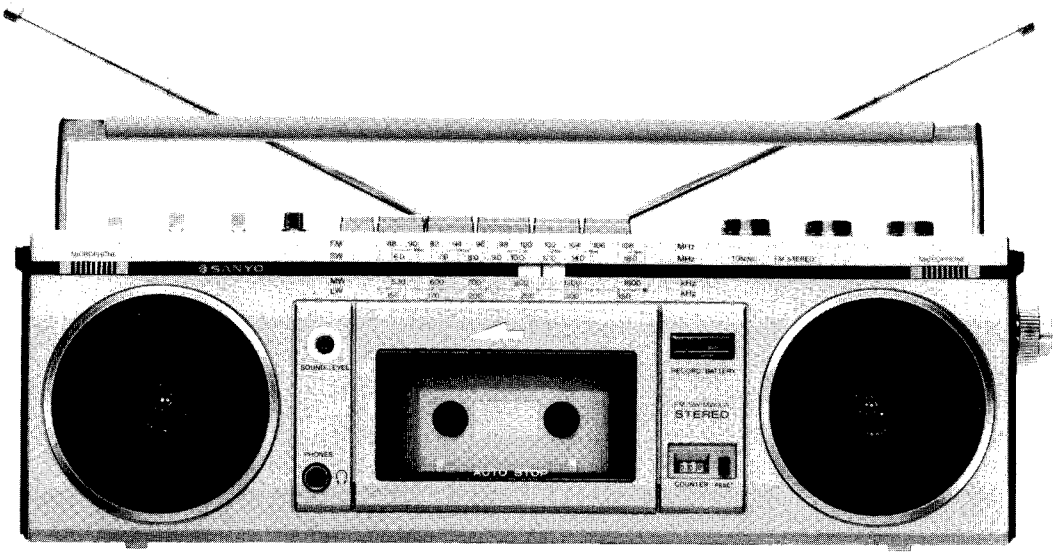
SERVICE MANUAL

SANYO

MINI FM/MW/SW/LW STEREO RADIO CASSETTE RECORDER

M7700LE

EUROPE



141 888 07

SPECIFICATIONS

Recording System	AC Bias
Erasing System	AC Erasing
Tape Speed	1-7/8ips ±3%
Fast Forward Time	140sec. (C-60 cassette)
Rewind Time	140sec. (C-60 cassette)
Wow & Flutter	0.25% RMS
Frequency Response	
NORMAL	70 – 10,000Hz
Signal to Noise Ratio	
without DOLBY	Better than 48dB
Hum & Noise	Less than –55dBs (Min. Vol. and Tone)
Crosstalk	
Track to Track	Better than 50dB
Channel Separation	Better than 50dB
Distortion (3rd harmonic)	
NORMAL	5%
Terminal Impedance	
MIC	3.3k-ohm
DIN INPUT	3.3k-ohm
DIN OUTPUT	2.2k-ohm
EXT. Speaker	3.2 – 6ohm
Headphone	8ohm
Current Consumption (at Min. VR)	
RECORD mode	210mA
PLAY mode	160mA
F. FWD mode	180mA
REW mode	180mA
Output Power	2.0/chW (maximum)
Power Source	
AC	AC Adaptor (120/240V 50/60Hz)
DC	7.5V (UM-2, C Cell, HP 11, R14, Babyzellen x 5)
Frequency Range	
LW	150 – 350kHz
MW	525 – 1,605kHz
SW	5.8 – 18MHz
FM	87.5 – 108MHz

–Specifications subject to change without notice.–

WM-4529

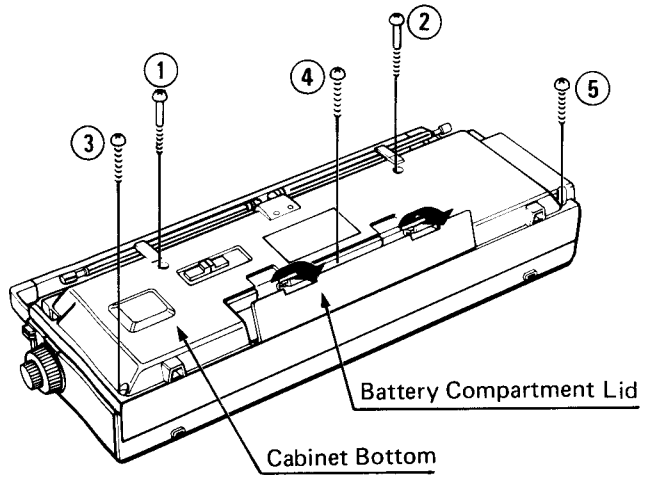
DISASSEMBLY INSTRUCTIONS

CABINET BOTTOM ASSEMBLY REMOVAL

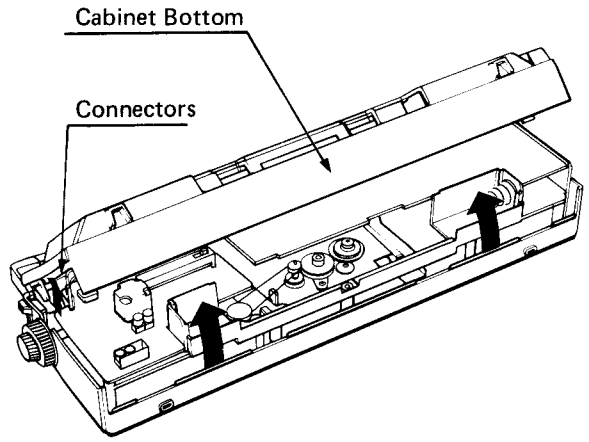
1. Take out the cassette tape from the compartment by pressing the STOP/EJECT button.

2. Turn over the unit on a soft surface and remove the battery compartment lid. Then, take out the five batteries from the unit.

3. Unscrew the five screws (1 – 5) fastening the Cabinet Bottom and lift the Cabinet Bottom as illustrated.



4. Pull out the two connectors of the dipole antenna from the Radio Tuner P.C.Board. Then, remove the Cabinet Bottom.

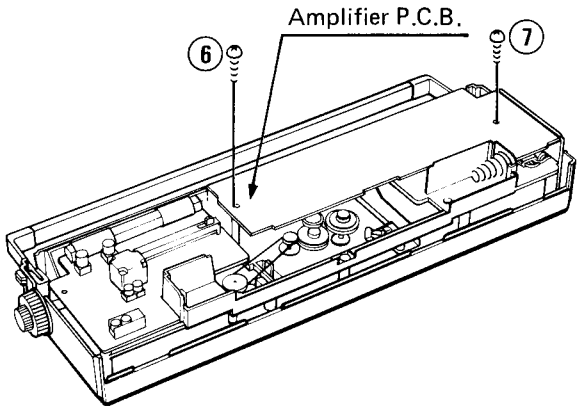


5. Reassemble in the reverse order.

AMPLIFIER P.C.BOARD ASSEMBLY REMOVAL

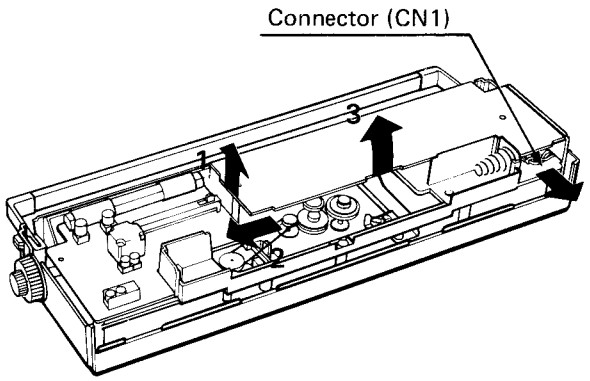
1. Follow the instructions for the Cabinet Bottom Assembly Removal.

2. Unscrew the two screws (6 & 7) fastening the P.C.Board.



3. Pull out the connector (CN1) from the P.C.Board.

4. Carefully remove the P.C.Board by lifting it in the numerical order as illustrated.

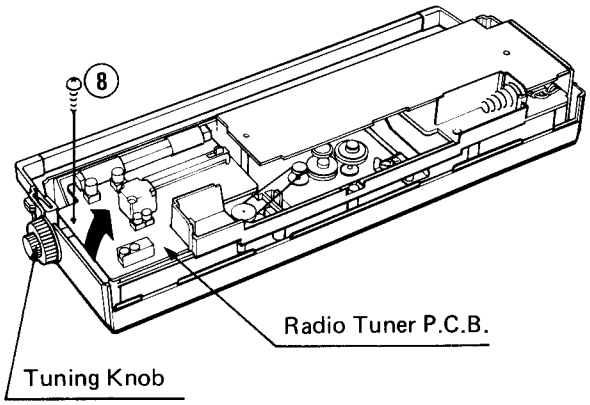


5. Reassemble in the reverser order.

RADIO TUNER P.C.BOARD REMOVAL

1. Follow the instructions for the Cabinet Bottom Assembly Removal.

2. Turn the Tuning Knob fully in an arbitrary direction.



DISASSEMBLY INSTRUCTIONS (Continued)

3. Unscrew a screw (8) fastening the P.C.Board.

4. Remove the P.C.Board by lifting the tuning knob side of it.

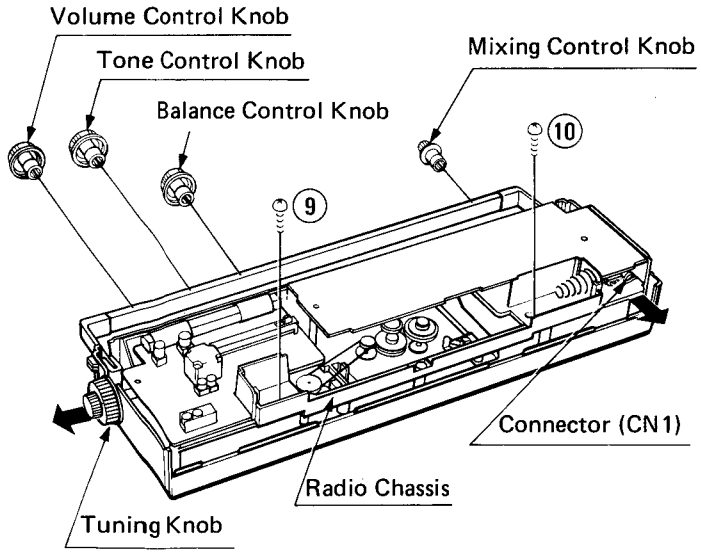
   NOTE:
   Do not turn the Tuning Knob before the Tuner P.C.Board is re-mounted to the unit.

5. Reassemble in the reverse order.

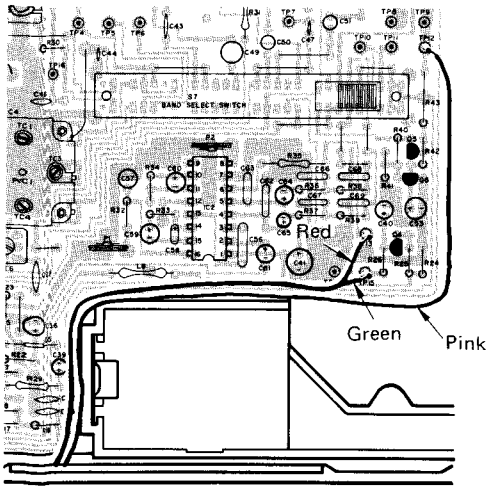
RADIO CHASSIS ASSEMBLY REMOVAL

1. Remove the Cabinet Bottom Assembly, Amplifier P.C.Board Assembly, and Tuner P.C.Board Assembly by following the instructions for them.

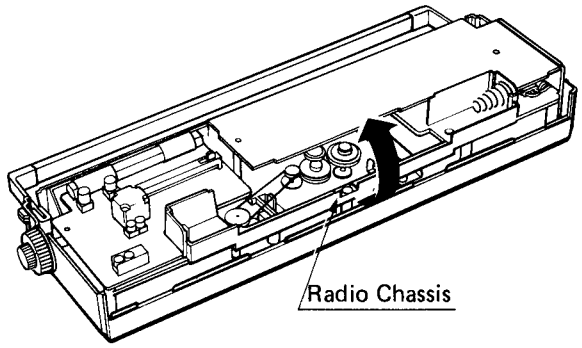
2. Pull out the Volume Control Knob, Tone Control Knob, Balance Control Knob, Mixing Control Knob, and Tuning Knob from the unit as illustrated.



3. Unsolder the three leads from the Radio Tuner P.C.Board and remove the connector (CN1) from the Amplifier P.C.Board as illustrated.



4. Unscrew the two screws (9 & 10) fastening the Radio Chassis and remove the Radio Chassis by tilting it as illustrated.

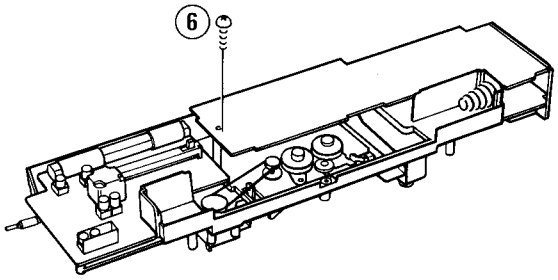


NOTE:
* The Radio Chassis may be removed without unsoldering the leads. Remove the Radio Chassis noting the leads.
* If the Radio Chassis from the Cabinet Top is completely removed, unsolder the lead wires of the Sound Level L.E.D. and Built-in Microphone from the Amplifier P.C.Board.

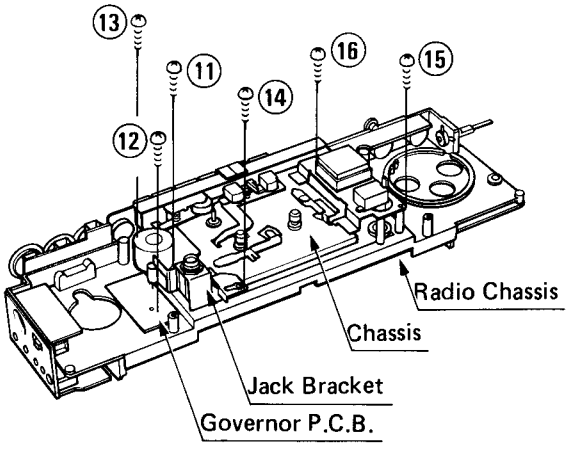
5. Reassemble in the reverse order.

CHASSIS ASSEMBLY REMOVAL

1. After removing the Cabinet Bottom and Radio Chassis, unscrew the screw (6) fastening the Amplifier P.C.Board. Then, turn over the Radio Chassis. See the illustration below.

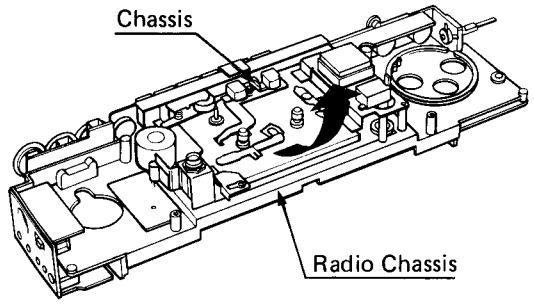


2. Unscrew the screw (11) fastening the Jack Bracket, the screw (12) fastening the Governor Circuit P.C.Board, and the screws (13 – 16) fastening the Chassis as illustrated.



DISASSEMBLY INSTRUCTIONS (Continued)

3. After removing the Jack Bracket and the Governor Circuit P.C.Board, remove the Chassis as illustrated.

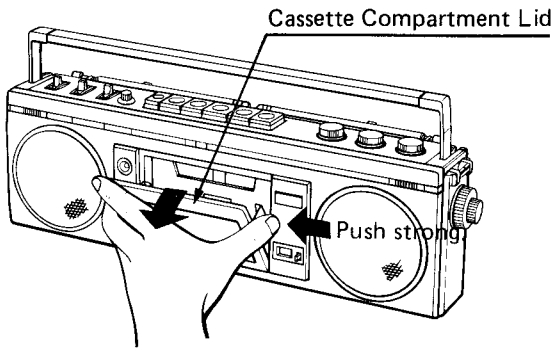


4. Reassemble in the reverse order.

CASSETTE COMPARTMENT LID REMOVAL

1. Open the cassette compartment lid by pressing the STOP/EJECT button.

2. To remove the cassette compartment lid, unlock the click of the cassette compartment lid from the Cabinet Top by pressing the counter side of the lid as illustrated.



NOTICE ON REASSEMBLY

1. When the unit is re-assembled, check to see that the lead wires do not touch the driving mechanism (Example: Flywheel, Pulley, and Belts etc.,).

2. When you solder the removed lead wires, please refer to the Wiring Diagram.

MECHANICAL ADJUSTMENTS

GENERAL REMARK

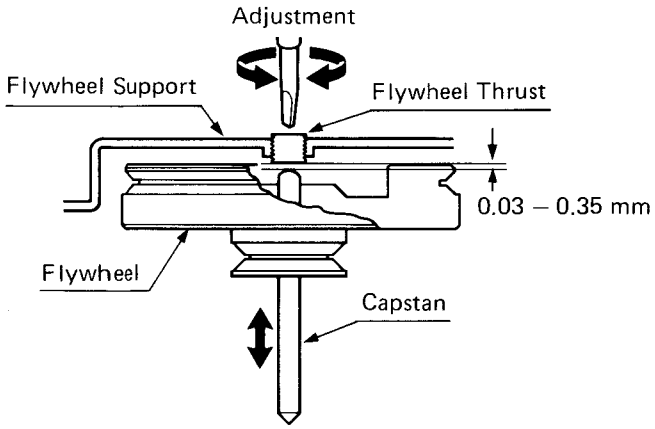
- Before adjusting the mechanism of this unit, wipe the tape contacting surfaces clean as well as the contact surfaces of the driving parts with a soft cloth soaked in alcohol.
  Trouble may occur because of oil and grease stains.

- Carefully handle the belt because grease easily attaches to it.

FLYWHEEL THRUST ADJUSTMENT

The clearance between the Flywheel Thrust and the Flywheel should be 0.03 – 0.35mm with the Chassis turned over.
If necessary, adjust the clearance by the following procedure.

1. While moving the Capstan up and down, slowly turn the Flywheel Thrust clockwise to obtain the clearance of 0 between the Thrust and Flywheel.
   NOTE:
   Do not turn the Flywheel Thrust forcibly.

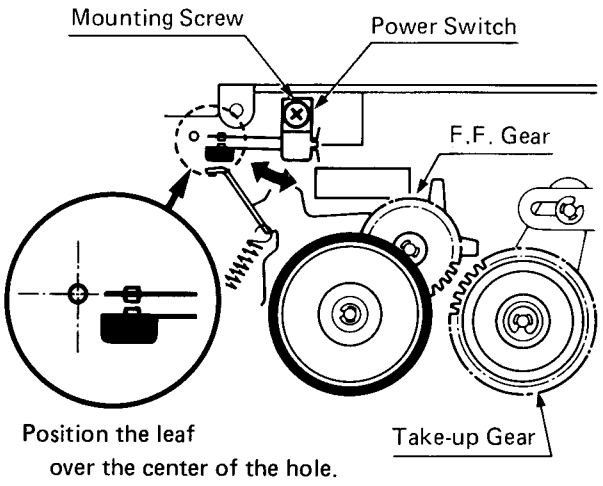


2. Turn the Thrust counter-clockwise by 45° from the position.

3. After the adjustment, secure the Thrust with paint or glue.

POWER SWITCH POSITION ADJUSTMENT

1. Check to see that the Power Switch is positioned over the center of the chassis adjusting hole as illustrated.



2. If necessary, loosen the screw fastening the Switch and adjust the switch position by moving the Switch.

3. After tightening the screw, check the switch movement as follows:
   * Set the unit in the playback mode and slowly push the F.FWD button. Then, check that the Power Switch is changed over from "Close" to "Open", and that it is changed to "Close" again after the Take-up Gear meshes with the FF Gear.

4. Check that the Power Switch functions properly. Then, secure the screw with paint or glue.

ELECTRICAL ADJUSTMENTS

REQUIRED EQUIPMENTS

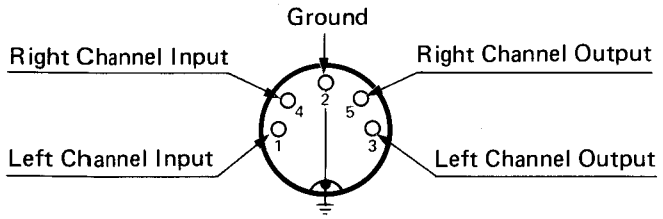
- VTVM (two sets)
- Frequency Counter
- Dummy Load (470 k-ohm)
- Dualtrace Synchroscope
- Test Tapes
  - * 3 kHz test Tape (TEAC MTT-111) for Tape Speed Adjustment
  - * 8 kHz Test Tape (TEAC MTT113C) for Head Azimuth Adjustment
  - * 1 kHz Test Tape (TEAC MTT-112B) for Playback Gain Adjustment
- DC Constant-Voltage Regulator
- Alignment Tool

Prior to the Electrical Adjustments, set the unit and the measuring instruments as follows:

- Function Switch . . . . . TAPE
- Mode Switch . . . . . STEREO
- Input Select Switch . . . . . to REC/PB terminal
- Beat Cancel Switch 1
- DC Constant-Voltage Regulator Output . . . . . 7.5 V DC

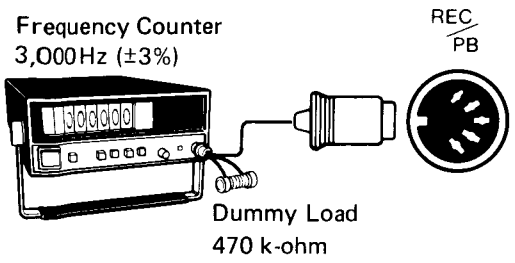
NOTE:

1. Perform each adjustment in the described order.
2. Obtain the output from the R/P DIN socket.
3. Supply 7.5 V DC from the constant-voltage regulator to the unit.
4. When obtaining the output from the R/P DIN socket, connect the leads noting the terminal numbers as illustrated.



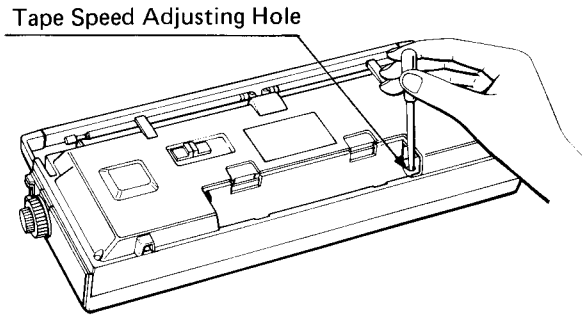
TAPE SPEED ADJUSTMENT

1. Remove the battery compartment lid and connect the frequency counter to the left or right channel output terminals of the R/P DIN socket as illustrated.



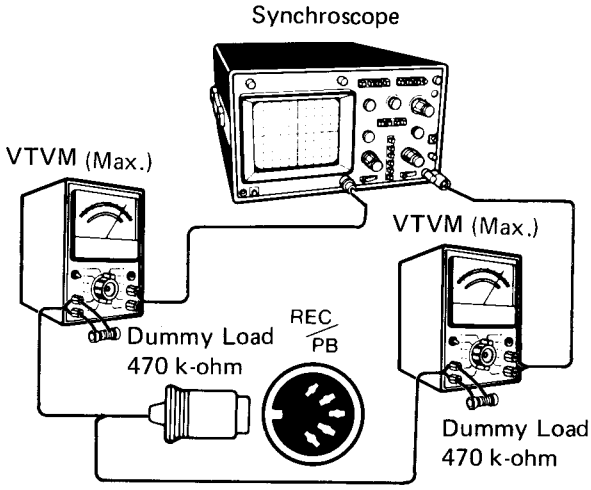
2. Insert the 3 kHz test tape (Example: TEAC MTT-111) into the compartment and play it back.

3. Adjust the tape speed by turning the potentiometer (P801) on the Governor Circuit P.C.Board with an alignment tool to obtain 3,000 Hz (±3%) on the frequency counter. See the illustration below.



HEAD AZIMUTH ADJUSTMENT

1. Remove the cassette compartment lid. Connect a VTVM and a dualtrace synchroscope to the R/P DIN socket as illustrated.

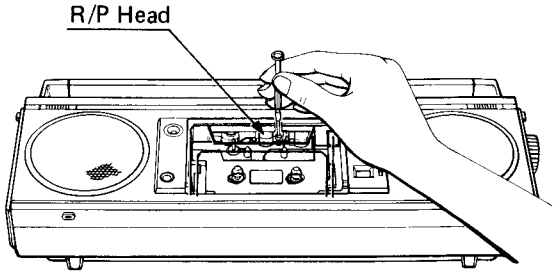


Set the synchroscope as follows:

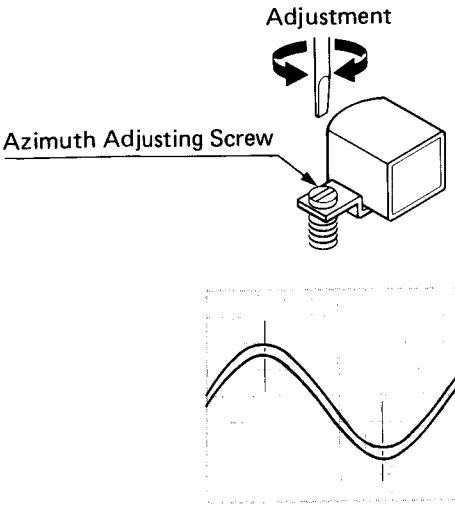
- * MODE . . . . . CHOP
- * SOURCE . . . . . INT (CH1 of CH2)
- * SWEEP MODE . . . . . AUTO

2. Insert the 8 kHz test tape (Example: TEAC MTT-113) into the compartment and play it back.

3. Slowly turn the azimuth adjusting screw until the amplitudes of both channel output wave forms become maximum and the wave forms overlap as well as possible in the maximum condition of the VTVM as illustrated.



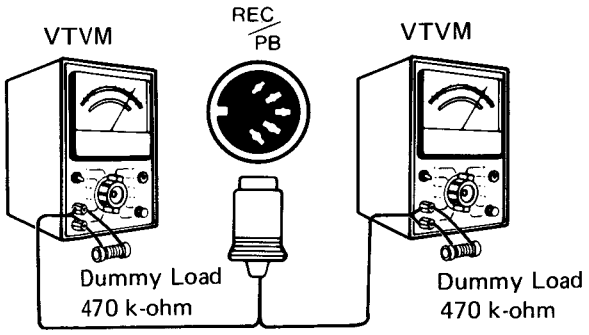
ELECTRICAL ADJUSTMENTS (Continued)



4. After the adjustment, secure the screw with paint or glue.

PLAYBACK GAIN ADJUSTMENT

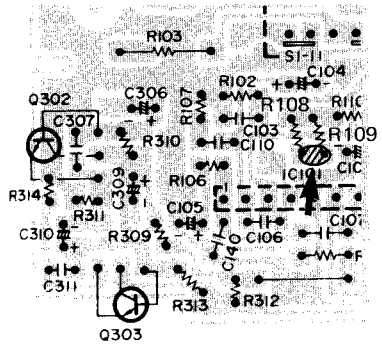
1. Connect the two sets of VTVM to the R/P DIN socket as illustrated and insert the 1 kHz test tape (Example: TEAC MTT-112B) into the compartment.



RIGHT CHANNEL

2. Check to see that the output of the right channel is 0.65 V (±0.1 V) with the unit in the playback mode.

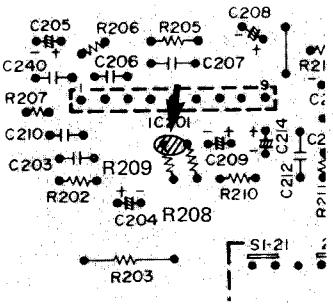
3. If necessary, ground the resistor R108 and/or R109 by soldering the pattern to obtain the specified output as illustrated.



LEFT CHANNEL

4. Adjust the output by grounding or separating the resistor R208 and/or R209 with the same method as RIGHT CHANNEL.

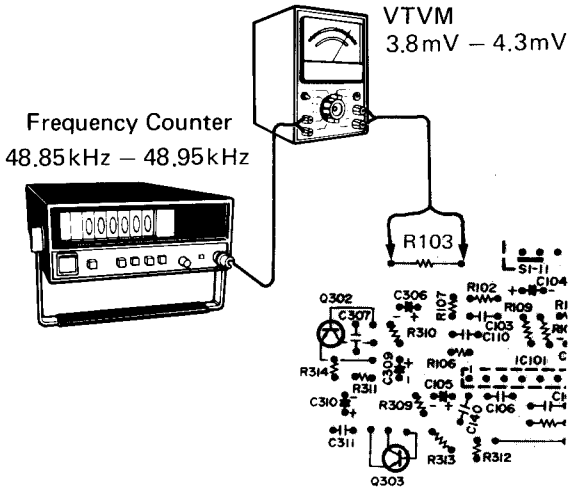
5. After the adjustment, check that the output difference between the right channel and the left channel is within 2 dB.



OSCILLATOR FREQUENCY AND RECORDING BIAS ADJUSTMENT

RIGHT CHANNEL

1. Connect the VTVM across R103, and the frequency counter to the output terminal of the VTVM as illustrated.

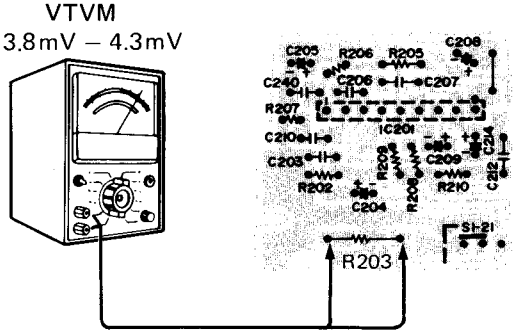


2. Set the unit in the recording mode. Then, adjust the frequency by turning the core of the oscillator transformer (T301) with an alignment tool until the frequency counter reads 48.85 kHz – 48.95 kHz.

3. Adjust the potentiometer (P101) with the unit in the recording mode until the VTVM reads 3.8 mV – 4.3 mV (380 μA – 430 μA).

LEFT CHANNEL

Connect the VTVM across R203. Then, adjust the potentiometer (P201) until the VTVM reads 3.8 mV – 4.3 mV (380 μA – 430 μA).



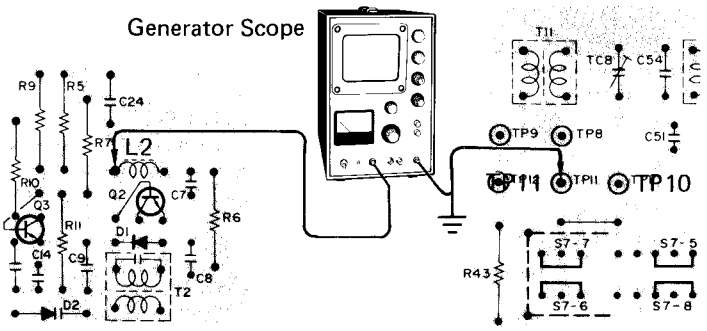
TUNER ADJUSTMENT

Measuring Instruments Required

- AM Standard-signal Generator
- FM Standard-signal Generator
- Generator Scope
- Stereo Signal Generator
- Loop Antenna
- Dummy Antenna (300 ohm, balanced type)
- VTVM
- Frequency Counter
- Distortion Meter
- Oscilloscope
- Dummy Load (3.2 ohm)
- Alignment Tool

NOTE:
Set the Function Switch to RADIO (ON). Then, perform each alignment following the chart below.

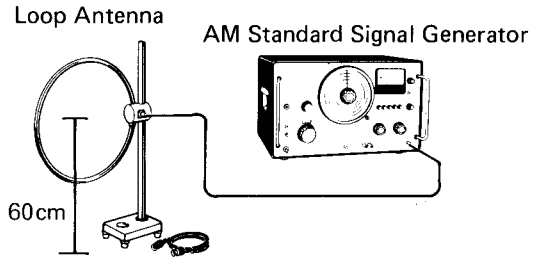
at FM/SW alignment (Tuning Range and Tracking)

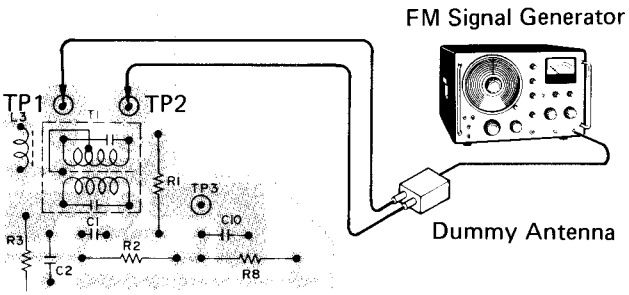


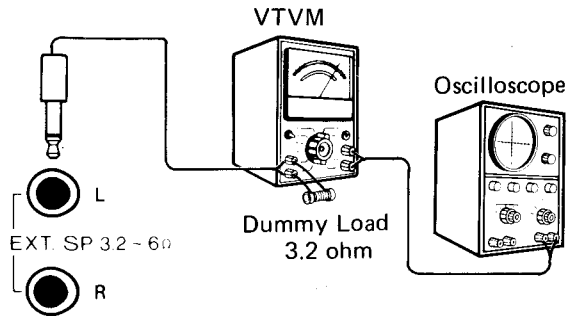
(Input Side) (Output Side)

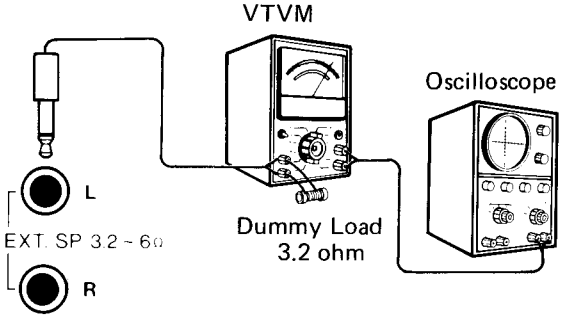
Measuring Instrument Connections

at MW/LW alignment



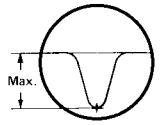
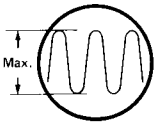






MW ALIGNMENT

Standard test frequency 400 kHz and modulation 30% at AM

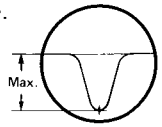
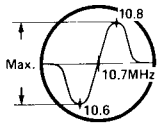
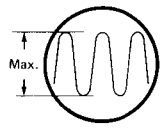
Step	Alignment	Connections		Frequency of Signal Generator	Tuning Dial Setting	Adjustment	Remarks
		INPUT	OUTPUT				
1	Calibration of IF for T5, T6 and T7	Connect standard loop antenna to output terminal of gene-scope. Place bar antenna 60 cm away from loop antenna.	Connect input terminal of gene-scope to detector output.	460 kHz	Low End	T5, T6 and T7	Obtain symmetrical curve and maximum amplitude. 
2	Adjustment of IF Gain						
3	Calibration of Tuning Range	Connect standard loop antenna to output of signal generator. Place bar antenna 60 cm away from loop antenna.	Connect VTVM with 3.2 ohm dummy load and oscilloscope to Ext. speaker terminal.	505 kHz		T10	Obtain sine wave of 400 Hz and maximum amplitude. 
4				1670 kHz	High End	TC3	
5	Adjustment of Tracking			600 kHz	600 kHz	L5-1 (bar ant. coil)	
6				1400 kHz	1400 kHz	TC4	
7	Repeat the above adjustments.						

* **Use a screwdriver with plastic grip for all adjustments.**

TUNER ADJUSTMENT (Continued)

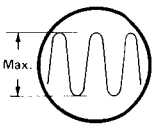
FM ALIGNMENT

Standard test frequency 400 Hz and deviation 22.5 kHz

Step	Alignment	Connections		Frequency of Signal Generator	Tuning Dial Setting	Adjustments	Remarks
		INPUT	OUTPUT				
1	Calibration of IF	Place output of gene-scope on Trap Coil (L2).	Connect input terminal of gene-scope to detector output.	10.7 MHz	Low End	Turn T4 (blue core) fully counter-clockwise. T2 and T3	Obtain symmetrical curve and maximum amplitude. 
2						T4 (blue core)	Obtain S curve and maximum amplitude. 
3	Calibration of Tuning Range	Connect signal generator to antenna terminal through dummy antenna.	Connect VTVM with 3.2 ohm dummy load and oscilloscope to Ext. speaker terminal.	87.2 MHz		L4	Obtain sine-curve and maximum amplitude. 
4				109 MHz	High End	TC2	
5	Adjustment of Tracking			90 MHz	90 MHz	L1	
6				106 MHz	106 MHz	TC1	
7	Repeat the above adjustments.						

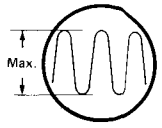
* **Use a screwdriver with plastic grip for all adjustments.**

SW ALIGNMENT

Step	Alignment	Connections		Frequency of Signal Generator	Tuning Dial Setting	Adjustment	Remarks
		INPUT	OUTPUT				
1	Calibration of Tuning Range	Connect signal generator to antenna terminal through dummy antenna.	Connect VTVM with 3.2 ohm dummy load and oscilloscope to Ext. speaker terminal.	5.7 MHz	Low End	T9	Obtain sine-wave of 400 Hz and maximum amplitude. 
2				18.7 MHz	High End	TC6	
3	Adjustment of Tracking			6.5 MHz	6.5 MHz	T8	
4				17 MHz	17 MHz	TC3	
5	Repeat the above adjustments.						

* **Use a screwdriver with plastic grip for all adjustments.**

LW ALIGNMENT

Step	Alignment	Connections		Frequency of Signal Generator	Tuning Dial Setting	Adjustment	Remarks
		INPUT	OUTPUT				
1	Calibration of Tuning Range	Connect standard loop antenna to output of signal generator. Place bar antenna 60 cm away from loop antenna.	Connect VTVM with 3.2 ohm dummy load and oscilloscope to Ext. speaker terminal.	147 kHz	Low End	T11	Obtain sine-wave of 400 Hz and maximum amplitude. 
2				365 Hz	High End	TC8	
3	Adjustment of Tracking			170 Hz	170 Hz	L5-2 (bar ant. coil)	
4				310 Hz	310 Hz	TC5	
5	Repeat the above adjustments.						

TUNER ADJUSTMENT (Continued)

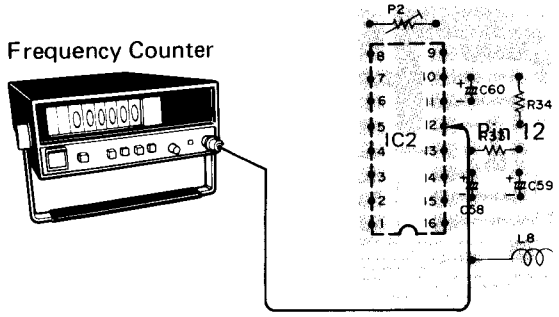
FM MULTIPLEX ADJUSTMENT

Prior to the adjustment, set the unit as follows:

- Function Switch . . . . . RADIO (ON)
- Band Select Switch . . . . . FM
- Mode Switch . . . . . STEREO
- Tone Control . . . . . MAXIMUM
- Volume Control . . . . . Center

19 kHz (V.C.O.) ADJUSTMENT

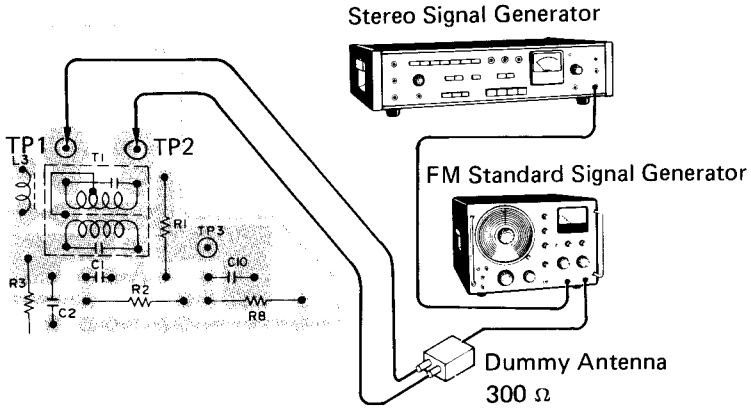
1. Connect the frequency counter to the twelfth pin in IC2 as illustrated.



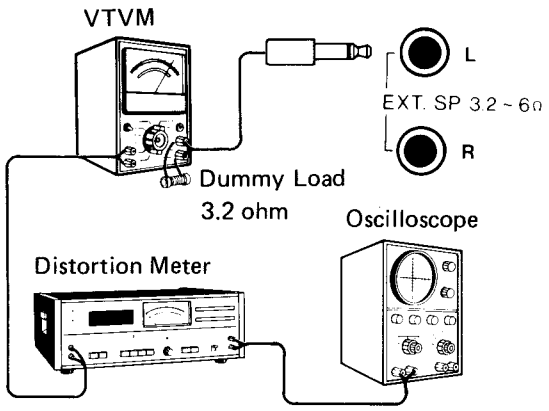
2. Adjust the potentiometer (P1) until the oscillation frequency of IC2 becomes 19 kHz (±20 Hz).

CHANNEL SEPARATION ADJUSTMENT

1. Insert the 300 ohm dummy antenna (balanced type) through the FM antenna terminals (TP1 and TP2) in the Radio Tuner P.C.Board as illustrated.



2. Connect the VTVM with 3.2 ohm dummy load, distortion meter, and oscilloscope to the external speaker jack of the left channel as illustrated.



3. Adjust the input measuring instruments as follows:
   - Stereo Signal Generator
     - * Pilot Signal . . . . . 7.5 kHz dev. (modulation 10%)
     - * Stereo Signal . . . . . 67.5 kHz dev. for main signal (modulation 90%)
     - * Modulation Frequency . . . . . 400 Hz
   - FM Standard-signal Generator
     - * Signal Generator Frequency . . . . . 98 MHz
     - * Signal Generator Output . . . . . 66 dB

4. Perform the alignment following the chart on the next page.

TUNER ADJUSTMENT (Continued)

FM MPX ALIGNMENT

Standard test frequency 400 Hz and deviation 75 kHz

Step	Alignment	Connections		Tuning Dial Setting	Adjustment	Remarks
		INPUT	OUTPUT			
1	ALL IC FO (19 kHz) Adjustment	None	Connect frequency counter or synchro-scope to No. 12 pin of IC (LA AN7410).	98 MHz	P1	Obtain 19 kHz on the frequency counter or synchro-scope.
2	FM Stereo Signal Separation	Connect Stereo SG to antenna terminal.	Connect VTVM with 3.2 ohm dummy load. distortion meter, and oscilloscope to R channel Ext. speaker terminal.			
3		Main channel signal of Stereo SG —— ON			Tuning Dial	Maximize amplitude and VTVM reading.
4		Pilot (19 kHz) and Sub channel signals of Stereo SG —— ON				Minimize distortion meter reading with maximum amplitude.
5		L channel and Pilot (19 kHz) signals of Stereo SG —— ON			P2	Minimize amplitude and VTVM reading.
6		Main channel signal of Stereo SG —— ON	Connect VTVM with 3.2 ohm dummy load, distortion meter, and oscilloscope to L channel Ext. speaker terminal.		Tuning Dial	Maximize amplitude and VTVM reading.
7		Pilot (19 kHz) and Sub channel signals of Stereo SG —— ON				Minimize distortion meter reading with maximum amplitude.
8		R channel and Pilot (19 kHz) signals of Stereo SG —— ON			P2	Minimize amplitude and VTVM reading.
9	Repeat the above adjustments.					

* **Use a screwdriver with plastic grip for all adjustments.**

5. Re-connect the measuring instruments to external speaker jack and adjust the tuning knob and the potentiometer (P2) following the next chart.

6. Repeatedly perform the adjustments in Items 5 and 6 to minimize the signal leakage for both right and left channels. Then, reduce the difference between each channel separation by adjusting the potentiometer (P2).

DIAL CORD STRINGING

DIAL CORD STRINGING

1. Mount the Radio Tuner P.C.Board on the Radio Chassis and then, the Drum to the shaft of the variable capacitor.

2. Tie the dial cord of length 1,050mm (effective length: 950 mm) and diameter ϕ0.5 to the spring and hook the spring to the illustrated position of the drum.

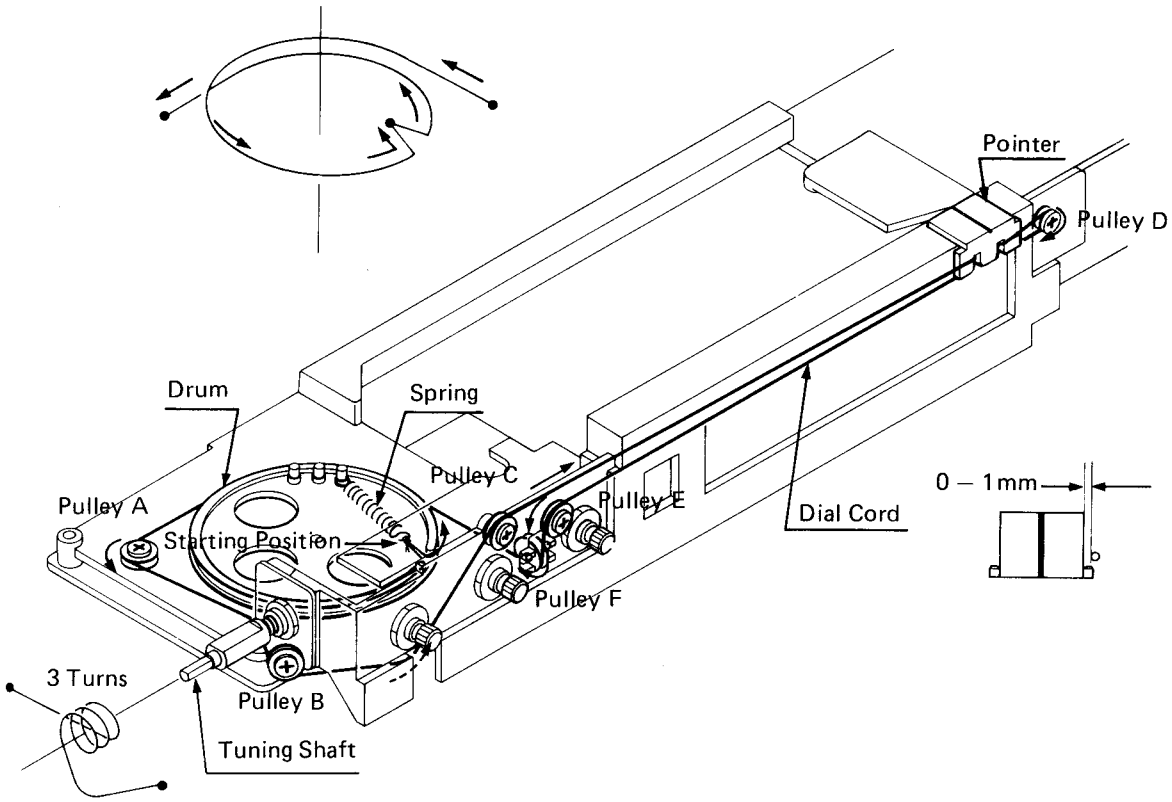
3. Engage the dial cord as illustrated in the following order. Drum ⇒ Pulley A ⇒ Tuner Shaft ⇒ Pulley B ⇒ Pulley C ⇒ Pulley D ⇒ Pulley E ⇒ Pulley F ⇒ Drum ⇒ Spring.

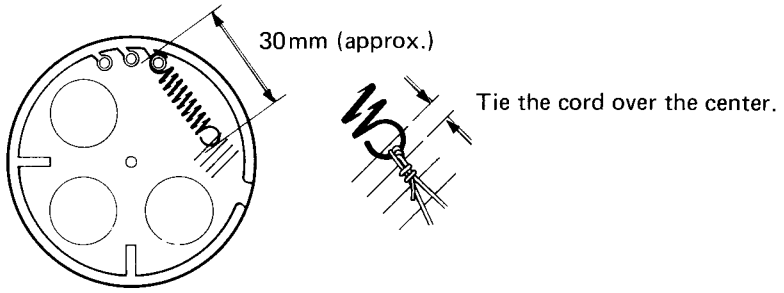
4. Hook the dial cord to the spring and tie the cord where the spring tip extends to the center between the two scratch marks on the drum. (Spring length becomes approximately 30 mm.)

5. Secure the place where the spring is hooked to the drum and the knot in the dial cord with paint or glue.

6. Turn the Tuning Shaft until it stops and set the pointer over the mark on the Radio Chassis as illustrated. Then, fix the pointer there.

7. Apply white lacquer to the pointer to secure.





PARTS LIST

Ref. No.	Part No.	Description	Q'ty
	PACKAGE		
	141 2 1719 20300	Handle	1
	141 6 1419 41404	Individual Carton	1
	141 6 1449 57900	Styrofoam Case, Top	1
	141 6 1449 58000	Styrofoam Case, Bottom	1
	141 6 2519 10690	Poly Cover	1
	141 6 2519 23033	Poly Cover	1
	141 6 3119 19300	Handle Reinforce	1
	141 6 4559 00100	Serial No. Sheet	3
	ACCESSORIES		
	4 1919 71100	AC Adaptor	1
	4 2419 72222	Cassette	1
	141 6 4119 93500	Instruction Manual	1
	CABINET		
SP1	4 1519 70790	Speaker (3.2 ohm)	1
SP2	4 1519 70790	Speaker (3.2 ohm)	1
MIC1	4 1539 70551	Microphone	1
MIC2	4 1539 70551	Microphone	1
	4 2359 70990	RT Pin Socket	2
	4 2359 74151	Connector 4P Assy	1
	4 2449 70250	Rod Antenna	2
	141 0 1119 64201	Cabinet Top Complete	1
	141 0 1119 64301	Cabinet Bottom Assy	1
	141 0 1249 15000	Cassette Lid Assy	1
	141 0 1339 08100	Battery Lid Assy	1
	141 0 1719 08100	Handle Arm Assy	2
	141 0 5519 06600	Eject Gear Assy	1
	141 2 1149 19300	Speaker Screen	2
	141 2 1559 02601	L.E.D. Grille	1
	141 2 1719 19701	Handle	1
	141 2 2149 13000	Ribbon	1
	141 2 2449 30200	Sheet	2
	141 2 2719 11900	Handle Cover, Left	1
	141 2 2719 12000	Handle Cover, Right	1
	141 2 2719 12500	Handle Reinforce	1
	141 2 2899 11200	Grille Tape	1
	141 2 3729 00800	Fix Speaker Bracket	4
	141 2 4219 09800	Screw	2
	141 2 4419 13500	Cushion	1
	141 2 4539 05400	Washer	1
	141 2 4569 05100	Ring	1
	141 2 4729 03001	Lug	2
	141 2 7319 35500	Cum	1
	141 2 7519 42400	Shoulder Strap Shaft	2
	141 2 8519 78900	Spring, Cum	1
	101 3 1202 60613	Screw, Flat Hd. +M2.6x6	2
	101 3 1302 60618	Screw, Pan Hd. +M2.6x6	2
	101 3 1302 60818	Screw, Pan Hd. +M2.6x8	2
	102 3 1303 00811	Screw, Pan Hd. Tapping-1 +M3.0x8	5
	112 3 1302 00012	E Ring M2	2
	143 3 1303 03018	Screw, Pan Hd. Tapping-B +M3.0x30	3
D302	202 5 7900 02420	Diode, SLP-24B (Sound Level)	1
	141 2 1639 30600	Volume Knob	3
	141 2 1639 30700	Microphone Volume Knob	1
	141 2 1639 33600	Tuning Knob	1
	141 2 1639 33700	Fine Tuning Knob	1
	141 2 1649 12900	Band Select Knob	1
	L.E.D. P.C.B. ASSY		
	4 2029 71090	L.E.D. P.C.B. Assy	1
D12	4 2029 70870	Diode, SLP-137B (FM Stereo)	1
D13	4 2029 70871	Diode, SLP-237B (Tuning)	1
	4 2269 31690	L.E.D. P.C.B.	1
	TUNER P.C.B. ASSY		
	4 1259 71350	Tuner P.C.B. Assy	1
	141 2 4729 04700	Staple 10	6
	141 2 4729 05000	Staple 5	9
	141 2 4729 04400	Staple 12.5	1

Ref. No.	Part No.	Description				Q'ty
	TUNER P.C.B. ASSY					
	101 3 1302 60411	Screw, Pan Hd.			+M2.6x4	2
	141 2 3229 27300	Shield Plate				1
	141 2 4469 23200	Cushion				1
L5	4 2579 70870	Bar Antenna				1
FB1	4 2539 70210	Bead Ferrite				1
CF1	4 2539 70230	Ceramic Filter				1
CF2	4 2539 70230	Ceramic Filter				1
C1	CC1 0 1500 KD00C	Ceramic	100 pF	50V	±10%	1
C2	CC2 2 3500 ZG00C	Ceramic	0.022 μF	50V	+80, −20%	1
C3	CI2 2 3250 KE00C	Boundary	0.022 μF	25V	±10%	1
C4	CC2 2 0500 JD00C	Ceramic	22 pF	50V	±5%	1
C5	CC3 0 A500 CD00C	Ceramic	3 pF	50V	±0.2PF	1
C6	CC2 0 A500 CCH0C	Ceramic	2 pF	50V	±0.2PF	1
C7	CC1 0 1500 KD00C	Ceramic	100 pF	50V	±10%	1
C8	CI2 2 3250 KE00C	Boundary	0.022 μF	25V	±10%	1
C9	CC2 2 3500 ZG00C	Ceramic	0.022 μF	50V	+80, −20%	1
C10	CI2 2 3250 KE00C	Boundary	0.022 μF	25V	±10%	1
C11	CC1 5 0500 JCH0C	Ceramic	15 pF	50V	±5%	1
C12	CC1 5 0500 JCH0C	Ceramic	15 pF	50V	±5%	1
C13	CC1 5 0500 JCH0C	Ceramic	15 pF	50V	±5%	1
C14	CC1 0 0500 JCH0C	Ceramic	10 pF	50V	±5%	1
C15	CI2 2 3250 KE00C	Boundary	0.022 μF	25V	±10%	1
C16	CC5 0 A500 CCH0C	Ceramic	5 pF	50V	±0.2PF	1
C17	CC2 2 3500 ZG00C	Ceramic	0.022 μF	50V	+80, −20%	1
C18	CB4 7 4100 0000V	Non-polar	0.47 μF	10V		1
C19	CD2 2 6100 0000V	Electrolytic	22 μF	10V		1
C20	CI2 2 3250 KE00C	Boundary	0.022 μF	25V	±10%	1
C21	CI2 2 3250 KE00C	Boundary	0.022 μF	25V	±10%	1
C22	CC2 2 3500 ZG00C	Ceramic	0.022 μF	50V	+80, −20%	1
C23	CI2 2 3250 KE00C	Boundary	0.022 μF	25V	±10%	1
C24	CC2 2 3500 ZG00C	Ceramic	0.022 μF	50V	+80, −20%	1
C25	CI2 2 3250 KE00C	Boundary	0.022 μF	25V	±10%	1
C26	CD1 0 763A 0001V	Electrolytic	100 μF	6.3V		1
C27	CI2 2 3250 KE00C	Boundary	0.022 μF	25V	±10%	1
C28	CI2 2 3250 KE00C	Boundary	0.022 μF	25V	±10%	1
C29	CC1 0 2500 KE00C	Ceramic	0.001 μF	50V	±10%	1
C30	CI2 2 3250 KE00C	Boundary	0.022 μF	25V	±10%	1
C31	CC3 3 1500 KE00C	Ceramic	330 pF	50V	±10%	1
C32	CC3 3 1500 KE00C	Ceramic	330 pF	50V	±10%	1
C33	CD4 7 563A 0000V	Electrolytic	4.7 μF	6.3V		1
C34	CI2 2 3250 KE00C	Boundary	0.022 μF	25V	±10%	1
C35	CM1 5 3500 K00SV	Mylar	0.015 μF	50V	±10%	1
C36	CD1 0 663A 0000V	Electrolytic	10 μF	6.3V		1
C37	CI1 0 3250 KE00C	Boundary	0.01 μF	25V	±10%	1
C38	CM1 5 3500 K00SV	Mylar	0.015 μF	50V	±10%	1
C39	CA2 2 463A X000V	Aluminum	0.22 μF	6.3V	+40, −20%	1
C40	CD2 2 6100 0000V	Electrolytic	22 μF	10V		1
C41	CD2 2 763A 0001V	Electrolytic	220 μF	6.3V		1
C42	CC1 5 0500 JD00C	Ceramic	15 pF	50V	±5%	1
C43	CC1 0 0500 JD00C	Ceramic	10 pF	50V	±5%	1
C44	CC3 0 A500 CD00C	Ceramic	3 pF	50V	±0.2PF	1
C45	CC2 7 0500 JD00C	Ceramic	27 pF	50V	±5%	1
C46	CI2 2 3250 KE00C	Boundary	0.022 μF	25V	±10%	1
C47	CC1 0 0500 KD00C	Ceramic	10 pF	50V	±10%	1
C48	CC1 5 0500 JD00C	Ceramic	15 pF	50V	±5%	1
C49	CS3 1 2500 J000V	Polystyrol	0.0031 μF	50V	±5%	1
C50	CS3 5 1500 J000V	Polystyrol	350 pF	50V	±5%	1
C51	CS2 0 1500 J000V	Polystyrol	200 pF	50V	±5%	1
C52	CC5 0 A500 CD00C	Ceramic	5 pF	50V	+0.2PF	1
C53	CD1 0 763A 0001V	Electrolytic	100 μF	6.3V		1
C54	CU9 5 0500 J000V	Mica	95 pF	50V	±5%	1
C55	CC2 2 3500 ZG00C	Ceramic	0.022 μF	50V	+80, −20%	1
C56	CM4 7 3500 K00SV	Mylar	0.047 μF	50V	±10%	1
C57	CS4 7 1500 J010F	Polystyrol	470 pF	50V	±5%	1
C58	CA3 3 463A X000V	Aluminum	0.33 μF	6.3V	+40, −20%	1
C59	CD1 0 563A 0000V	Electrolytic	1 μF	6.3V		1
C60	CD2 2 563A 0000V	Electrolytic	2.2 μF	6.3V		1
C61	CD1 0 563A 0000V	Electrolytic	1 μF	6.3V		1
C62	CM1 0 3500 K00SV	Mylar	0.01 μF	50V	±10%	1
C63	CM1 0 3500 K00SV	Mylar	0.01 μF	50V	±10%	1

PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
	TUNER P.C.B. ASSY		
C64	CA2 2 463A X000V	Aluminum 0.22 μF 6.3V +40, −20%	1
C65	CA2 2 463A X000V	Aluminum 0.22 μF 6.3V +40, −20%	1
C66	CM3 3 2500 K00SV	Mylar 0.0033 μF 50V ±10%	1
C67	CM3 3 2500 K00SV	Mylar 0.0033 μF 50V ±10%	1
C68	CM1 0 2500 K00SV	Mylar 0.001 μF 50V ±10%	1
C69	CM1 0 2500 K00SV	Mylar 0.001 μF 50V ±10%	1
C70	CC1 2 1500 KD00C	Ceramic 120 pF 50V ±10%	1
C71	CI2 2 3250 KE00C	Boundary 0.022 μF 25V ±10%	1
C72	CC1 0 2500 KE00C	Ceramic 0.001 μF 50V ±10%	1
C73	CC2 7 0500 KD00C	Ceramic 27 pF 50V ±10%	1
D1	4 2029 70860	Diode, ITT73N	1
D2	4 2029 70790	Diode, ITT410	1
D3	202 5 9110 18820	Diode, 1S188	1
D4	202 5 9110 18820	Diode, 1S188	1
D5	4 2029 70860	Diode, ITT73N	1
D6	202 5 9110 18820	Diode, 1S188	1
D7	202 5 9110 18820	Diode, 1S188	1
D8	4 2029 70860	Diode, ITT73N	1
IC1	4 2069 70232	IC, MPC1018	1
IC2	4 2069 70500	IC, AN7410	1
L1	4 2599 70334	RF Coil	1
L2	4 2659 70180	Loading Coil	1
L3	4 2659 70300	Loading Coil	1
L4	4 2589 70911	OSC Coil	1
L6	4 2659 70241	Loading Coil	1
L7	4 2659 70241	Loading Coil	1
P1	4 2229 72450	Potentiometer (B-10k)	1
P2	4 2229 72060	Potentiometer (B-30k)	1
PVC1	4 2249 70451	Variable Condenser	1
Q1	4 2039 70380	Transistor, 2SC1674	1
Q2	4 2039 70380	Transistor, 2SC1674	1
Q3	4 2039 70460	Transistor, 2SC1675	1
Q4	4 2039 70431	Transistor, 2SC1815	1
Q5	4 2039 70431	Transistor, 2SC1815	1
Q6	4 2039 70431	Transistor, 2SC1815	1
R1	RD3 3 2251 JS000	Carbon 3.3k ohm 1/4W ±5%	1
R2	RD3 3 1251 JS000	Carbon 330 ohm 1/4W ±5%	1
R3	RD5 6 2251 JS000	Carbon 5.6k ohm 1/4W ±5%	1
R4	RD2 2 1251 JS000	Carbon 220 ohm 1/4W ±5%	1
R5	RD5 6 4251 JS000	Carbon 560k ohm 1/4W ±5%	1
R6	RD5 6 2251 JS000	Carbon 5.6k ohm 1/4W ±5%	1
R7	RD1 0 1251 JS000	Carbon 100 ohm 1/4W ±5%	1
R8	RD3 9 4251 JS000	Carbon 390k ohm 1/4W ±5%	1
R9	RD5 6 4251 JS000	Carbon 560k ohm 1/4W ±5%	1
R10	RD2 2 1251 JS000	Carbon 220 ohm 1/4W ±5%	1
R11	RD5 6 2251 JS000	Carbon 5.6k ohm 1/4W ±5%	1
R12	RD6 8 4251 JS000	Carbon 680k ohm 1/4W ±5%	1
R13	RD1 0 4251 JS000	Carbon 100k ohm 1/4W ±5%	1
R14	RD1 0 1251 JS000	Carbon 100 ohm 1/4W ±5%	1
R15	RD1 0 2121 JH000	Carbon 1k ohm 1/8W ±5%	1
R16	RD1 0 2121 JH000	Carbon 1k ohm 1/8W ±5%	1
R17	RD4 7 2251 JN000	Carbon 4.7k ohm 1/4W ±5%	1
R18	RD4 7 2251 JN000	Carbon 4.7k ohm 1/4W ±5%	1
R19	RD5 6 3251 JN000	Carbon 56k ohm 1/4W ±5%	1
R20	RD1 0 1251 JN000	Carbon 100 ohm 1/4W ±5%	1
R21	RD1 0 3251 JN000	Carbon 10k ohm 1/4W ±5%	1
R22	RD1 5 3251 JN000	Carbon 15k ohm 1/4W ±5%	1
R23	RD6 8 3251 JN000	Carbon 68k ohm 1/4W ±5%	1
R24	RD5 6 4251 JN000	Carbon 560k ohm 1/4W ±5%	1
R25	RD2 2 2251 JN000	Carbon 2.2k ohm 1/4W ±5%	1
R26	RD2 2 1251 JN000	Carbon 220 ohm 1/4W ±5%	1
R27	RD2 2 2251 JN000	Carbon 2.2k ohm 1/4W ±5%	1
R28	RD1 0 3251 JN000	Carbon 10k ohm 1/4W ±5%	1
R29	RD2 2 2251 JS000	Carbon 2.2k ohm 1/4W ±5%	1
R30	RD5 6 0251 JN000	Carbon 56 ohm 1/4W ±5%	1
R31	RD1 0 0251 JS000	Carbon 10 ohm 1/4W ±5%	1
R32	RD1 8 3251 JN000	Carbon 18k ohm 1/4W ±5%	1
R33	RD1 0 2251 JN000	Carbon 1k ohm 1/4W ±5%	1
R34	RD1 8 3251 JN000	Carbon 18k ohm 1/4W ±5%	1
R35	RD8 2 1251 JN000	Carbon 820 ohm 1/4W ±5%	1

Ref. No.	Part No.	Description	Q'ty
	TUNER P.C.B. ASSY		
R36	RD3 3 2251 JN000	Carbon 3.3k ohm 1/4W ±5%	1
R37	RD3 3 2251 JN000	Carbon 3.3k ohm 1/4W ±5%	1
R38	RD3 3 2251 JN000	Carbon 3.3k ohm 1/4W ±5%	1
R39	RD3 3 2251 JN000	Carbon 3.3k ohm 1/4W ±5%	1
R40	RD1 5 2251 JN000	Carbon 1.5k ohm 1/4W ±5%	1
R41	RD2 2 1251 JN000	Carbon 220 ohm 1/4W ±5%	1
R42	RD1 8 2251 JN000	Carbon 1.8k ohm 1/4W ±5%	1
R43	RD3 3 A251 JN000	Carbon 3.3 ohm 1/4W ±5%	1
R44	RD3 3 1251 JN000	Carbon 330 ohm 1/4W ±5%	1
R45	RD2 7 2121 JH000	Carbon 2.7k ohm 1/8W ±5%	1
S7	4 2319 73860	Slide Switch (Band Select)	1
TC3	4 2249 70590	Trimmer Condenser	1
TC5	4 2249 70600	Trimmer Condenser	1
TC6	4 2249 70580	Trimmer Condenser	1
TC7	4 2249 70590	Trimmer Condenser	1
TC8	4 2249 70600	Trimmer Condenser	1
TP1	4 2369 70740	RT Pin	1
TP2	4 2369 70740	RT Pin	1
TP3	4 2369 70740	RT Pin	1
TP4	4 2369 70740	RT Pin	1
TP5	4 2369 70740	RT Pin	1
TP6	4 2369 70740	RT Pin	1
TP7	4 2369 70740	RT Pin	1
TP8	4 2369 70740	RT Pin	1
TP9	4 2369 70740	RT Pin	1
TP10	4 2369 70740	RT Pin	1
TP11	4 2369 70740	RT Pin	1
TP12	4 2369 70740	RT Pin	1
TP13	4 2369 70740	RT Pin	1
TP14	4 2369 70740	RT Pin	1
TP15	4 2369 70740	RT Pin	1
TP16	4 2369 70740	RT Pin	1
T1	4 2579 70790	Antenna Coil	1
T2	4 2569 70990	FM 10.7MHz IFT	1
T3	4 2569 70321	IFT	1
T4	4 2569 70331	IFT	1
T5	4 2569 70910	IFT AM	1
T6	4 2569 70920	IFT AM	1
T7	4 2569 71130	IFT	1
T8	4 2579 70721	Antenna Coil	1
T9	4 2589 71420	OSC Transformer	1
T10	4 2589 71360	OSC Transformer MW	1
T11	4 2589 71570	OSC Transformer	1
	4 2359 70990	RT Pin Socket	1
	AMPLIFIER P.C.B. ASSY		
	4 1329 74673	Amplifier P.C.B. Assy	1
CN1	4 2369 71571	Connector 4P	1
	141 2 4729 04700	Staple 10	9
	141 2 4729 05000	Staple 5	7
	141 2 4729 05800	Staple 15	4
C101	CA1 0 4100 M000V	Aluminum 0.1 μF 10V ±20%	1
C102	CC2 2 3500 ZG00C	Ceramic 0.022 μF 50V +80, −20%	1
C103	CC1 5 2500 KE00C	Ceramic 0.0015 μF 50V ±10%	1
C104	CD4 7 5100 0000V	Electrolytic 4.7 μF 10V	1
C105	CD4 7 6100 0001V	Electrolytic 47 μF 10V	1
C106	CC5 6 1500 KE00C	Ceramic 560 pF 50V ±10%	1
C107	CC2 2 1500 KD00C	Ceramic 220 pF 50V ±10%	1
C108	CD1 0 7100 0001V	Electrolytic 100 μF 10V	1
C109	CD4 7 663A 0001V	Electrolytic 47 μF 6.3V	1
C110	CC1 2 2500 KE00C	Ceramic 0.0012 μF 50V ±10%	1
C111	CC3 9 1500 KE00C	Ceramic 390 pF 50V ±10%	1
C112	CM1 8 3500 K00SV	Mylar 0.018 μF 50V ±10%	1
C113	CC1 2 2500 KE00C	Ceramic 0.0012 μF 50V ±10%	1
C114	CD1 0 6100 0000V	Electrolytic 10 μF 10V	1
C115	CD3 3 663A 0001V	Electrolytic 33 μF 6.3V	1
C116	CD2 2 5100 0000V	Electrolytic 2.2 μF 10V	1
C117	CC3 9 1500 KE00C	Ceramic 390 pF 50V ±10%	1
C118	CC1 0 1500 KD00C	Ceramic 100 pF 50V ±10%	1
C119	CD1 0 763A 0001V	Electrolytic 100 μF 6.3V	1

PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
	AMPLIFIER P.C.B. ASSY		
C120	CC5 6 1500 KE00C	Ceramic 560 pF 50V ±10%	1
C121	CM1 2 3500 K00SV	Mylar 0.012 μF 50V ±10%	1
C122	CD1 0 6100 0000V	Electrolytic 10 μF 10V	1
C123	CD4 7 4100 0000V	Electrolytic 0.47 μF 10V	1
C124	CD2 2 5100 0000V	Electrolytic 2.2 μF 10V	1
C125	CC2 2 3500 ZG00C	Ceramic 0.022 μF 50V +80, −20%	1
C129	CD4 7 4100 0000V	Electrolytic 0.47 μF 10V	1
C130	CC1 0 2500 KE00C	Ceramic 0.001 μF 50V ±10%	1
C131	CD1 0 7100 0001V	Electrolytic 100 μF 10V	1
C132	CD3 3 7100 0001V	Electrolytic 330 μF 10V	1
C133	CD1 0 6100 0000V	Electrolytic 10 μF 10V	1
C134	CC1 0 1500 KD00C	Ceramic 100 pF 50V ±10%	1
C135	CD4 7 4100 0000V	Electrolytic 0.47 μF 10V	1
C136	CD4 7 6100 0001V	Electrolytic 47 μF 10V	1
C137	CD1 0 863A 0001V	Electrolytic 1000 μF 6.3V	1
C138	CD4 7 7160 0001V	Electrolytic 470 μF 16V	1
C139	CC3 3 1500 KE00C	Ceramic 330 pF 50V ±10%	1
C140	CC2 2 1500 KD00C	Ceramic 220 pF 50V ±10%	1
C141	CM3 3 2500 K00SV	Mylar 0.0033 μF 50V ±10%	1
C142	CC1 0 0500 KD00C	Ceramic 10 pF 50V ±10%	1
C201	CA1 0 4100 M000V	Aluminum 0.1 μF 10V ±20%	1
C202	CC2 2 3500 ZG00C	Ceramic 0.022 μF 50V +80, −20%	1
C203	CC1 5 2500 KE00C	Ceramic 0.0015 μF 50V ±10%	1
C204	CD4 7 5100 0000V	Electrolytic 4.7 μF 10V	1
C205	CD4 7 6100 0001V	Electrolytic 47 μF 10V	1
C206	CC5 6 1500 KE00C	Ceramic 560 pF 50V ±10%	1
C207	CC2 2 1500 KD00C	Ceramic 220 pF 50V ±10%	1
C208	CD1 0 7100 0001V	Electrolytic 100 μF 10V	1
C209	CD4 7 663A 0001V	Electrolytic 47 μF 6.3V	1
C210	CC1 2 2500 KE00C	Ceramic 0.0012 μF 50V ±10%	1
C211	CC3 9 1500 KE00C	Ceramic 390 pF 50V ±10%	1
C212	CM1 8 3500 K00SV	Mylar 0.018 μF 50V ±10%	1
C213	CC1 2 2500 KE00C	Ceramic 0.0012 μF 50V ±10%	1
C214	CD1 0 6100 0000V	Electrolytic 10 μF 10V	1
C215	CD3 3 663A 0001V	Electrolytic 33 μF 6.3V	1
C216	CD2 2 5100 0000V	Electrolytic 2.2 μF 10V	1
C217	CC3 9 1500 KE00C	Ceramic 390 pF 50V ±10%	1
C218	CC1 0 1500 KD00C	Ceramic 100 pF 50V ±10%	1
C219	CD1 0 763A 0001V	Electrolytic 100 μF 6.3V	1
C220	CC5 6 1500 KE00C	Ceramic 560 pF 50V ±10%	1
C221	CM1 2 3500 K00SV	Mylar 0.012 μF 50V ±10%	1
C222	CD1 0 6100 0000V	Electrolytic 10 μF 10V	1
C223	CD4 7 4100 0000V	Electrolytic 0.47 μF 10V	1
C224	CD2 2 5100 0000V	Electrolytic 2.2 μF 10V	1
C225	CC2 2 3500 ZG00C	Ceramic 0.022 μF 50V +80, −20%	1
C229	CD4 7 4100 0000V	Electrolytic 0.47 μF 10V	1
C230	CC1 0 2500 KE00C	Ceramic 0.001 μF 50V ±10%	1
C231	CD1 0 7100 0001V	Electrolytic 100 μF 10V	1
C232	CD3 3 7100 0001V	Electrolytic 330 μF 10V	1
C233	CD1 0 6100 0000V	Electrolytic 10 μF 10V	1
C234	CC1 0 1500 KD00C	Ceramic 100 pF 50V ±10%	1
C235	CD4 7 4100 0000V	Electrolytic 0.47 μF 10V	1
C236	CD4 7 6100 0001V	Electrolytic 47 μF 10V	1
C237	CD1 0 863A 0001V	Electrolytic 1000 μF 6.3V	1
C238	CD4 7 7160 0001V	Electrolytic 470 μF 16V	1
C239	CC3 3 1500 KE00C	Ceramic 330 pF 50V ±10%	1
C240	CC2 2 1500 KD00C	Ceramic 220 pF 50V ±10%	1
C241	CM3 3 2500 K00SV	Mylar 0.0033 μF 50V ±10%	1
C242	CC1 0 0500 KD00C	Ceramic 10 pF 50V ±10%	1
C301	CP1 8 2101 J000V	Polypropylene 0.0018 μF 100V ±5%	1
C302	CM2 2 3500 K00SV	Mylar 0.022 μF 50V ±10%	1
C303	CM6 8 2500 K00SV	Mylar 0.0068 μF 50V ±10%	1
C304	CM2 2 3500 K00SV	Mylar 0.022 μF 50V ±10%	1
C305	CD1 0 7100 0001V	Electrolytic 100 μF 10V	1
C306	CD1 0 5100 0000V	Electrolytic 1 μF 10V	1
C307	CC4 7 1500 KE00C	Ceramic 470 pF 50V ±10%	1
C308	CD1 0 6100 0000V	Electrolytic 10 μF 10V	1
C309	CD4 7 4100 0000V	Electrolytic 0.47 μF 10V	1
C310	CD1 0 5100 0000V	Electrolytic 1 μF 10V	1

Ref. No.	Part No.	Description	Q'ty
	AMPLIFIER P.C.B. ASSY		
C311	CC4 7 1500 KE00C	Ceramic 470 pF 50V ±10%	1
C312	CA1 0 4100 M000V	Aluminum 0.1 μF 10V ±20%	1
C314	CD4 7 6100 0001V	Electrolytic 47 μF 10V	1
C315	CD1 0 6160 0000V	Electrolytic 10 μF 16V	1
C319	CD3 3 7160 0000V	Electrolytic 330 μF 16V	1
D101	205 5 9040 44210	Diode, DS442	1
D102	205 5 9040 44210	Diode, DS442	1
D103	202 5 9110 18810	Diode, 1S188	1
D104	202 5 9110 18810	Diode, 1S188	1
D105	205 5 9040 44210	Diode, DS442	1
D106	205 5 9040 44210	Diode, DS442	1
D201	205 5 9040 44210	Diode, DS442	1
D202	205 5 9040 44210	Diode, DS442	1
D203	202 5 9110 18810	Diode, 1S188	1
D204	202 5 9110 18810	Diode, 1S188	1
D205	205 5 9040 44210	Diode, DS442	1
D206	205 5 9040 44210	Diode, DS442	1
D301	202 5 9110 18810	Diode, 1S188	1
IC101	4 2069 70071	IC, TA7137P	1
IC102	206 5 1164 13510	IC, LA4135	1
IC201	4 2069 70071	IC, TA7137P	1
IC202	206 5 1164 13510	IC, LA4135	1
J1	4 2359 73470	Jack 1P (Ext. Microphone, Right)	1
J2	4 2359 71780	Jack 1P (Ext. Microphone, Left)	1
J3	4 2359 73470	Jack 1P (Ext. Speaker, Right)	1
J4	4 2359 73470	Jack 1P (Ext. Speaker, Left)	1
J5	4 2359 73540	External Power Socket	1
L101	4 2559 70031	Coil (33 mH)	1
L201	4 2559 70031	Coil (33 mH)	1
P101	4 2229 72973	Potentiometer (B-300k)	1
P201	4 2229 72973	Potentiometer (B-300k)	1
Q101	4 2039 70430	Transistor, 2SC1815	1
Q102	4 2039 70430	Transistor, 2SC1815	1
Q103	203 5 5100 53650	Transistor, 2SC536	1
Q104	203 5 5100 53650	Transistor, 2SC536	1
Q201	4 2039 70430	Transistor, 2SC1815	1
Q202	4 2039 70430	Transistor, 2SC1815	1
Q203	203 5 5100 53650	Transistor, 2SC536	1
Q204	203 5 5100 53650	Transistor, 2SC536	1
Q301	203 5 6940 54550	Transistor, 2SD545	1
Q302	203 5 5100 69362	Transistor, 2SC693	1
Q303	4 2039 70430	Transistor, 2SC1815	1
Q304	203 5 5100 53650	Transistor, 2SC536	1
Q305	203 5 5100 53650	Transistor, 2SC536	1
R101	RD4 7 2251 JN000	Carbon 4.7k ohm 1/4W ±5%	1
R102	RD3 3 2251 JN000	Carbon 3.3k ohm 1/4W ±5%	1
R103	RD1 0 0251 JS000	Carbon 10 ohm 1/4W ±5%	1
R105	RD1 2 3251 JN000	Carbon 12k ohm 1/4W ±5%	1
R106	RD5 6 3251 JN000	Carbon 56k ohm 1/4W ±5%	1
R107	RD1 0 2251 JN000	Carbon 1k ohm 1/4W ±5%	1
R108	RD6 8 1251 JN000	Carbon 680 ohm 1/4W ±5%	1
R109	RD3 9 1251 JN000	Carbon 390 ohm 1/4W ±5%	1
R110	RD6 8 2251 JN000	Carbon 6.8k ohm 1/4W ±5%	1
R111	RD1 0 4251 JN000	Carbon 100k ohm 1/4W ±5%	1
R112	RD6 8 2251 JN000	Carbon 6.8k ohm 1/4W ±5%	1
R113	RD1 2 3251 JN000	Carbon 12k ohm 1/4W ±5%	1
R115	RD1 0 3251 JN000	Carbon 10k ohm 1/4W ±5%	1
R116	RD1 0 3251 JN000	Carbon 10k ohm 1/4W ±5%	1
R117	RD3 3 3251 JN000	Carbon 33k ohm 1/4W ±5%	1
R118	RD1 0 1251 JN000	Carbon 100 ohm 1/4W ±5%	1
R119	RD4 7 2251 JN000	Carbon 4.7k ohm 1/4W ±5%	1
R120	RD3 3 5251 JN000	Carbon 3.3M ohm 1/4W ±5%	1
R121	RD1 0 2251 JN000	Carbon 1k ohm 1/4W ±5%	1
R122	RD3 3 1251 JN000	Carbon 330 ohm 1/4W ±5%	1
R123	RD4 7 2251 JN000	Carbon 4.7k ohm 1/4W ±5%	1
R124	RD1 5 2251 JN000	Carbon 1.5k ohm 1/4W ±5%	1
R125	RD1 0 1251 JN000	Carbon 100 ohm 1/4W ±5%	1
R126	RD2 2 2251 JN000	Carbon 2.2k ohm 1/4W ±5%	1
R129	RD4 7 A251 JN000	Carbon 4.7 ohm 1/4W ±5%	1
R130	RD1 8 2251 JN000	Carbon 1.8k ohm 1/4W ±5%	1

PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
	AMPLIFIER P.C.B. ASSY		
R131	RD3 9 2251 JN000	Carbon 3.9k ohm 1/4W ±5%	1
R132	RD4 7 0251 JN000	Carbon 47 ohm 1/4W ±5%	1
R133	RD2 2 2251 JS000	Carbon 2.2k ohm 1/4W ±5%	1
R135	RD2 7 2251 JN000	Carbon 2.7k ohm 1/4W ±5%	1
R136	RD1 2 3251 JN000	Carbon 12k ohm 1/4W ±5%	1
R137	RD2 2 2251 JN000	Carbon 2.2k ohm 1/4W ±5%	1
R201	RD4 7 2251 JN000	Carbon 4.7k ohm 1/4W ±5%	1
R202	RD3 3 2251 JN000	Carbon 3.3k ohm 1/4W ±5%	1
R203	RD1 0 0251 JS000	Carbon 10 ohm 1/4W ±5%	1
R205	RD1 2 3251 JN000	Carbon 12k ohm 1/4W ±5%	1
R206	RD5 6 3251 JN000	Carbon 56k ohm 1/4W ±5%	1
R207	RD1 0 2251 JN000	Carbon 1k ohm 1/4W ±5%	1
R208	RD6 8 1251 JN000	Carbon 680 ohm 1/4W ±5%	1
R209	RD3 9 1251 JN000	Carbon 390 ohm 1/4W ±5%	1
R210	RD6 8 2251 JN000	Carbon 6.8k ohm 1/4W ±5%	1
R211	RD1 0 4251 JN000	Carbon 100k ohm 1/4W ±5%	1
R212	RD6 8 2251 JN000	Carbon 6.8k ohm 1/4W ±5%	1
R213	RD1 2 3251 JN000	Carbon 12k ohm 1/4W ±5%	1
R215	RD1 0 3251 JN000	Carbon 10k ohm 1/4W ±5%	1
R216	RD1 0 3251 JN000	Carbon 10k ohm 1/4W ±5%	1
R217	RD3 3 3251 JN000	Carbon 33k ohm 1/4W ±5%	1
R218	RD1 0 1251 JN000	Carbon 100 ohm 1/4W ±5%	1
R219	RD4 7 2251 JN000	Carbon 4.7k ohm 1/4W ±5%	1
R220	RD3 3 5251 JN000	Carbon 3.3M ohm 1/4W ±5%	1
R221	RD1 0 2251 JN000	Carbon 1k ohm 1/4W ±5%	1
R222	RD3 3 1251 JN000	Carbon 330 ohm 1/4W ±5%	1
R223	RD4 7 2251 JN000	Carbon 4.7k ohm 1/4W ±5%	1
R224	RD1 5 2251 JN000	Carbon 1.5k ohm 1/4W ±5%	1
R225	RD1 0 1251 JN000	Carbon 100 ohm 1/4W ±5%	1
R226	RD2 2 2251 JN000	Carbon 2.2k ohm 1/4W ±5%	1
R229	RD4 7 A251 JN000	Carbon 4.7 ohm 1/4W ±5%	1
R230	RD1 8 2251 JN000	Carbon 1.8k ohm 1/4W ±5%	1
R231	RD3 9 2251 JN000	Carbon 3.9k ohm 1/4W ±5%	1
R232	RD4 7 0251 JN000	Carbon 47 ohm 1/4W ±5%	1
R233	RD2 2 2251 JN000	Carbon 2.2k ohm 1/4W ±5%	1
R235	RD2 7 2251 JN000	Carbon 2.7k ohm 1/4W ±5%	1
R236	RD1 2 3251 JN000	Carbon 12k ohm 1/4W ±5%	1
R237	RD2 2 2251 JN000	Carbon 2.2k ohm 1/4W ±5%	1
R301	RD3 9 1251 JN000	Carbon 390 ohm 1/4W ±5%	1
R302	RD2 2 1251 JN000	Carbon 220 ohm 1/4W ±5%	1
R303	RD2 2 2251 JS000	Carbon 2.2k ohm 1/4W ±5%	1
R304	RD2 2 2251 JN000	Carbon 2.2k ohm 1/4W ±5%	1
R305	RD5 6 A251 JN000	Carbon 5.6 ohm 1/4W ±5%	1
R306	RD1 0 3251 JN000	Carbon 10k ohm 1/4W ±5%	1
R307	RD2 7 0251 JN000	Carbon 27 ohm 1/4W ±5%	1
R308	RD1 0 1251 JN000	Carbon 100 ohm 1/4W ±5%	1
R309	RD1 0 3251 JN000	Carbon 10k ohm 1/4W ±5%	1
R310	RD1 0 5251 JN000	Carbon 1.0M ohm 1/4W ±5%	1
R311	RD1 5 1251 JN000	Carbon 150 ohm 1/4W ±5%	1
R312	RD3 3 2251 JN000	Carbon 3.3k ohm 1/4W ±5%	1
R313	RD3 9 4251 JN000	Carbon 390k ohm 1/4W ±5%	1
R314	RD1 2 1251 JN000	Carbon 120 ohm 1/4W ±5%	1
R315	RD3 9 2251 JN000	Carbon 3.9k ohm 1/4W ±5%	1
R316	RD5 6 3251 JN000	Carbon 56k ohm 1/4W ±5%	1
R317	RD6 8 1251 JN000	Carbon 680 ohm 1/4W ±5%	1
R318	RD6 8 2251 JN000	Carbon 6.8k ohm 1/4W ±5%	1
R319	RD8 2 2251 JN000	Carbon 8.2k ohm 1/4W ±5%	1
R320	RD3 3 1251 JS000	Carbon 330 ohm 1/4W ±5%	1
T301	4 2589 71460	OSC Transformer	1
S1	4 2319 73470	Slide Switch (Record/Play)	1
	4 2369 70740	RT Pin	10
	VOLUME CONTROL P.C.B. ASSY		
	4 1329 74850	Volume Control P.C.B. Assy	1
C126	CM5 6 3500 K00SV	Mylar 0.056 μF 50V ±10%	1
C127	CC1 8 2250 KE00C	Ceramic 0.0018 μF 50V ±10%	1
C128	CM4 7 3500 K00SV	Mylar 0.047 μF 50V ±10%	1
C226	CM5 6 3500 K00SV	Mylar 0.056 μF 50V ±10%	1
C227	CC1 8 2500 KE00C	Ceramic 0.0018 μF 50V ±10%	1
C228	CM4 7 3500 K00SV	Mylar 0.047 μF 50V ±10%	1

Ref. No.	Part No.	Description	Q'ty
	VOLUME CONTROL P.C.B. ASSY		
R127	RP4 7 2121 JH000	Pretty 4.7k ohm 1/8W ±5%	1
R128	RD3 3 2251 JN000	Carbon 3.3k ohm 1/4W ±5%	1
R227	RP4 7 2121 JH000	Pretty 4.7k ohm 1/8W ±5%	1
R228	RD3 3 2251 JN000	Carbon 3.3k ohm 1/4W ±5%	1
VR1	4 2229 71841	Volume Control (Volume, B-50k)	1
VR2	4 2229 71840	Volume Control (Tone, A-20k)	1
VR3	4 2229 71842	Volume Control (Balance, MN-20k)	1
	SWITCH P.C.B. ASSY		
	4 1329 74860	Switch P.C.B. Assy	1
	141 2 4729 05000	Staple 5	1
	141 2 4729 04700	Staple 10	1
C313	CD1 0 7100 0001V	Electrolytic 100 μF 10V	1
D109	205 5 9040 44210	Diode, DS442	1
D110	205 5 9040 44210	Diode, DS442	1
D209	205 5 9040 44210	Diode, DS442	1
D210	205 5 9040 44210	Diode, DS442	1
R114	RD1 8 2251 JS000	Carbon 1.8k ohm 1/4W ±5%	1
R214	RD1 8 2251 JS000	Carbon 1.8k ohm 1/4W ±5%	1
S2	4 2319 73700	Switch Lever (Function)	1
S3	4 2319 73690	Switch Lever (Mode)	1
S4	4 2319 72271	Switch Lever (Input Select)	1
	SOCKET P.C.B. ASSY		
	4 1329 74871	Socket P.C.B. Assy	1
C141	CD1 0 5100 0000V	Electrolytic 1 μF 10V	1
C241	CD1 0 5100 0000V	Electrolytic 1 μF 10V	1
C316	CM8 2 2500 K00SV	Mylar 0.0082 μF 50V ±10%	1
C317	CM2 2 3500 K00SV	Mylar 0.022 μF 50V ±10%	1
C318	CM1 0 2500 K00SV	Mylar 0.001 μF 50V ±10%	1
R104	RD1 0 5251 JN000	Carbon 1.0M ohm 1/4W ±5%	1
R204	RD1 0 5251 JN000	Carbon 1.0M ohm 1/4W ±5%	1
J6	4 2359 71553	Din Socket 5P (Record Play)	1
S5	4 2319 72170	Slide Switch (Beat Cancel)	1
	MOTOR ASSY		
	4 5279 70953	Motor Assy	1
	4 2869 70410	Governor P.C.B. Assy	1
C801	CC2 2 3500 ZG00C	Ceramic 0.022 μF 50V ±2%	1
C802	CD1 0 7160 0000V	Electrolytic 100 μF 16V	1
D801	205 5 9060 44410	Diode, DS444	1
D802	205 5 9050 44310	Diode, DS443	1
D803	205 5 9040 44280	Diode, DS442Y	1
D804	205 5 9040 44280	Diode, DS442Y	1
TH801	204 5 9000 00200	Thermister, SDT20	1
L801	4 2539 70410	Choke Coil (500 μH)	1
L802	4 2539 70451	Choke Coil (3.2 μH)	1
L803	4 2539 70451	Choke Coil (3.2 μH)	1
P801	4 2229 72980	Potentiometer (B-350)	1
Q801	203 5 6750 544503	Transistor, 2SB544	1
Q802	203 5 5000 53660	Transistor, 2SC536	1
R801	RD1 5 2251 JV000	Carbon 1.5k ohm 1/4W ±5%	1
R802	RD1 0 1251 JV000	Carbon 100 ohm 1/4W ±5%	1
R803	RD1 3 1251 JV000	Carbon 130 ohm 1/4W ±5%	1
R804	RD5 6 1251 JV000	Carbon 560 ohm 1/4W ±5%	1
R805	RD1 1 2251 JV000	Carbon 1.1k ohm 1/4W ±5%	1
R806	RD6 8 1251 JV000	Carbon 680 ohm 1/4W ±5%	1
R807	RD1 1 0251 JV000	Carbon 11 ohm 1/4W ±5%	1
R808	RD1 0 0251 JV000	Carbon 10 ohm 1/4W ±5%	1
R809	RD1 5 2251 JV000	Carbon 1.5k ohm 1/4W ±5%	1
	4 2579 70952	Motor	1
	MECHANISM		
VR4	4 2229 71750	Volume Control (Mixing, A-20k)	1
FT1	4 2249 70300	Fine Tuner	1
S6	4 2319 71861	Leaf Switch (Power)	1
J8	4 2359 74010	Jack 1P (Headphone)	1
J7	4 2359 74590	Jack Assy (Mixing)	1
HD1	4 2429 71410	R/P Head	1
HD2	4 2429 70341	Erase Head	1

PARTS LIST (Continued)

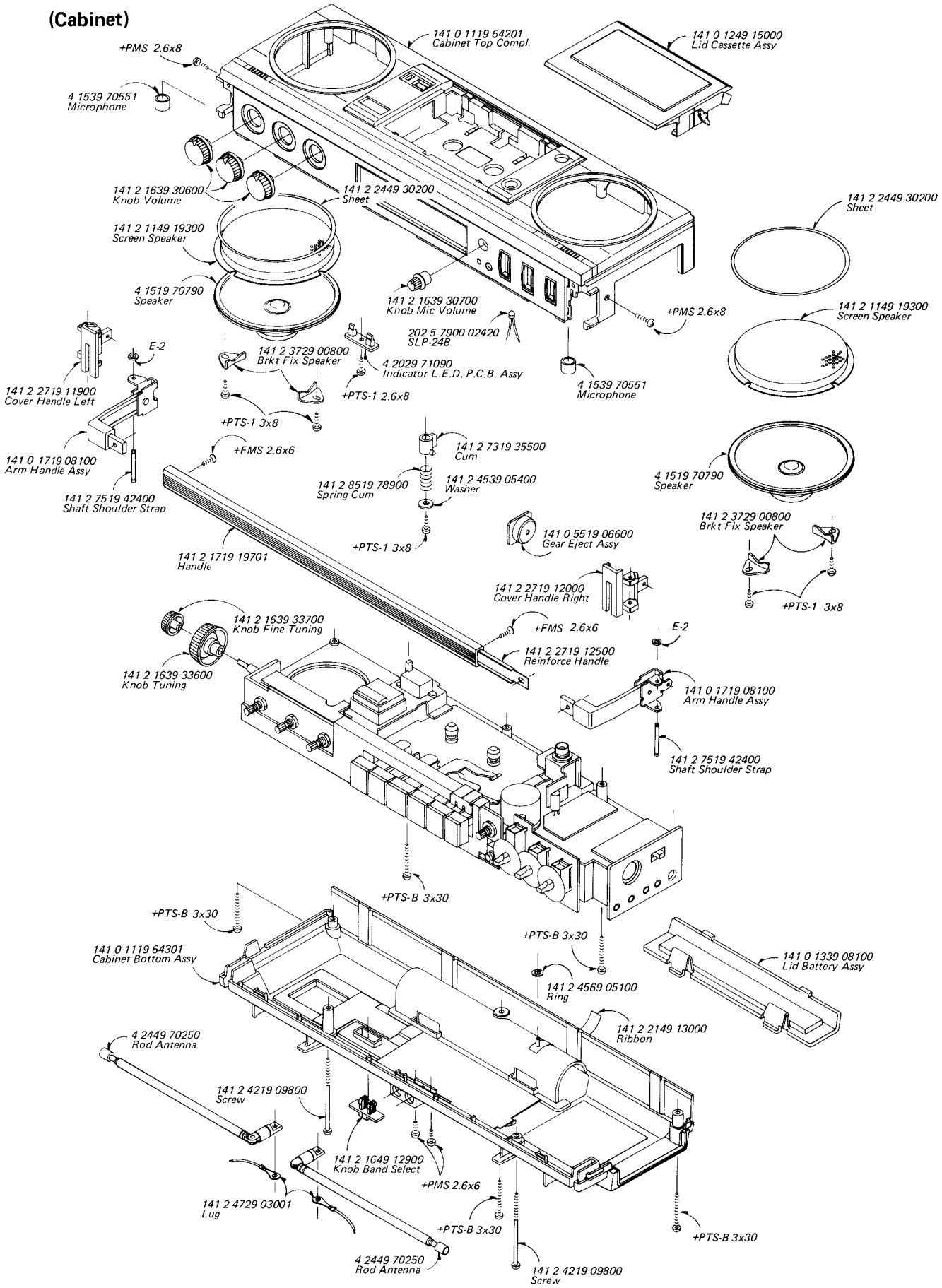
Ref. No.	Part No.	Description	Q'ty
	MECHANISM		
ME1	4 5119 70461	Indicator	1
	141 0 3119 16900	Chassis Assy	1
	141 0 3159 00600	Eject Lever Bracket Assy	1
	141 0 3169 04200	Pause Bracket Assy	1
	141 0 5219 06100	Flywheel Assy	1
	141 0 5369 01000	Supply Reel Plate Complete	1
	141 0 5369 01100	Reel Plate Complete	1
	141 0 5419 02600	Pinch Roller Assy	1
	141 0 5519 06201	Take-up Idler Assy	1
	141 0 7319 18300	Slide Pause Plate Assy	1
	141 0 7319 18400	Slide Base Assy	1
	141 0 7419 20200	Lock Plate Assy	1
	141 0 7419 20300	Crank Select Assy	1
	141 0 7419 22000	Record Lever Assy	1
	141 0 7419 22100	Stop Lever Assy	1
	141 0 7419 22200	Play Lever Assy	1
	141 0 7419 22300	Rewind Lever Assy	1
	141 0 7419 22400	F.F. Lever Assy	1
	141 0 7439 05700	Record Lock Lever Assy	1
	141 0 7439 05800	Take-up Arm Pulley Assy	1
	141 0 7439 06000	Sensor Lever Assy	1
	141 2 1619 57800	Pause Button	1
	141 2 1629 04000	Switch Knob	3
	141 2 2419 22100	Switch Screen	3
	141 2 3119 11801	Radio Chassis	1
	141 2 3229 25900	Shield Volume Plate	1
	141 2 3529 10100	Spacer, Pause Plate	1
	141 2 3679 27500	Headphone Bracket	1
	141 2 3739 05000	Meter Bracket	1
	141 2 3769 08000	Spacer, Head	1
	141 2 3829 06700	Terminal Battery Anode	1
	141 2 3829 20800	Spring, Battery	1
	141 2 4179 01800	Nut	1
	141 2 4219 03000	Screw	4
	141 2 4219 09000	Screw	1
	141 2 4219 11400	Screw	2
	141 2 4219 14000	Screw	5
	141 2 4419 12000	Cushion	1
	141 2 4459 15900	Motor Cushion	2
	141 2 4469 00500	Flywheel Thrust	1
	141 2 4469 28300	Meter Cushion	1
	141 2 4469 29100	Switch Screen Cushion	3
	141 2 4539 06900	Washer	1
	141 2 4539 08000	Washer	1
	141 2 4539 09300	Washer	1
	141 2 4539 09400	Washer	1
	141 2 4579 03200	Lug	1
	141 2 4619 00901	Brake Tube	1
	141 2 4729 00200	Lug	1
	141 2 4729 04000	Lug	1
	141 2 4729 06000	Lug	1
	141 2 5119 04500	Pointer	1
	141 2 5389 02700	Drum	1
	141 2 5519 03300	Dial Roller A	4
	141 2 5519 23300	F.F. Gear	1
	141 2 5519 31500	Drive Idler	1
	141 2 5649 08500	Counter Belt	1
	141 2 5649 10800	Take-up Belt	1
	141 2 5649 13600	Drive Belt	1
	141 2 5719 07700	Spacer	1
	141 2 5719 07800	Spacer	2
	141 2 5719 09000	Spacer	2
	141 2 5729 14100	Capstan Metal	1
	141 2 7149 02700	Brake Plate	1
	141 2 7419 16500	Push Push Latch Plate	1
	141 2 7419 52300	Shut-off Lever	1
	141 2 7419 55800	Eject Plate	1
	141 2 7419 57900	Pause Lever	1
	141 2 7419 58000	Select Lever	1
	141 2 7439 14200	Review Lever	1

Ref. No.	Part No.	Description	Q'ty
	MECHANISM		
	141 2 8119 04900	Counter	1
	141 2 8219 17800	Spacer, Pinch Roller	1
	141 2 8219 25800	String Bracket	1
	141 2 8259 04700	Dial Roller	1
	141 2 8259 05900	Dial Roller	1
	141 2 8419 09600	Actuating Record Lever	1
	141 2 8459 02900	Flywheel Support	1
	141 2 8519 05400	Spring, Actuator Record	1
	141 2 8519 06700	Spring, Cassette Case Lever B	1
	141 2 8519 12200	Spring, Motor Lock	1
	141 2 8519 33000	Spring, Index Lock Lever	1
	141 2 8519 35400	Spring, Record Lock Lever	1
	141 2 8519 47400	Spring, Head	1
	141 2 8519 49800	Spring, F.F. Lever	1
	141 2 8519 50701	Spring, Play Lever	1
	141 2 8519 57300	Spring, Stop Lever	1
	141 2 8519 63600	Spring, Brake	2
	141 2 8519 69100	Spring, Shut-off	1
	141 2 8519 70300	Spring, Pause Plate	1
	141 2 8519 71500	Spring, Slide Base	1
	141 2 8519 74700	Spring, Brake	1
	141 2 8519 75700	Spring, Pinch Roller	1
	141 2 8519 77000	Spring, Lock Plate	1
	141 2 8519 77300	Spring, Actuating Record	1
	141 2 8519 77500	Spring, Pause Latch	1
	141 2 8539 32800	Spring, Cassette	1
R134	RD1 5 1251 JM000	Carbon 150 ohm 1/4W ±5%	1
R234	RD1 5 1251 JM000	Carbon 150 ohm 1/4W ±5%	1
	101 3 1302 00311	Screw, Pan Hd. +M2.0x3	7
	101 3 1302 00411	Screw, Pan Hd. +M2.0x4	5
	101 3 1302 00611	Screw, Pan Hd. +M2.0x6	1
	101 3 1302 60411	Screw, Pan Hd. +M2.6x4	1
	101 3 2502 00811	Screw, Cylinder Hd. -M2.0x8	1
	102 3 1302 60811	Screw, Pan Hd. Tapping-1 +M2.6x8	9
	102 3 1302 61011	Screw, Pan Hd. Tapping-1 +M2.6x10	4
	110 3 1102 00023	Small Round Washer M2.0	1
	110 3 1202 60023	Finished Washer M2.6	1
	112 3 1301 50082	E Ring M1.5	13
	112 3 1302 00082	E Ring M2.0	6
	131 3 1302 60511	Screw, Pan Hd. C SW +M2.6x5	1
	143 3 1303 03018	Screw, Pan Hd. Tapping-B +M3.0x30	2
	101 3 1302 60811	Screw, Pan Hd. +M2.6x8	2

NOTES: 1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

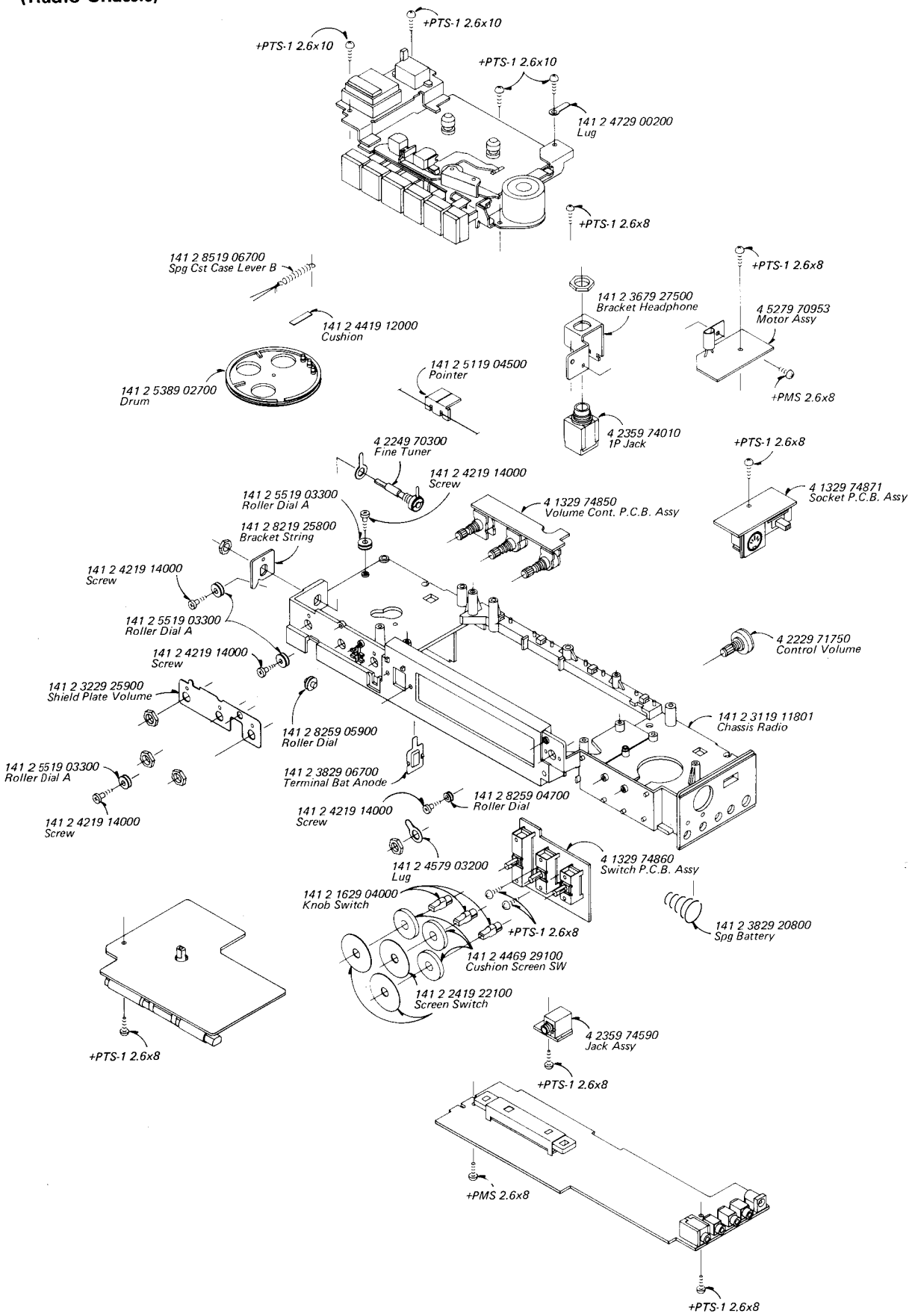
EXPLODED VIEW

(Cabinet)



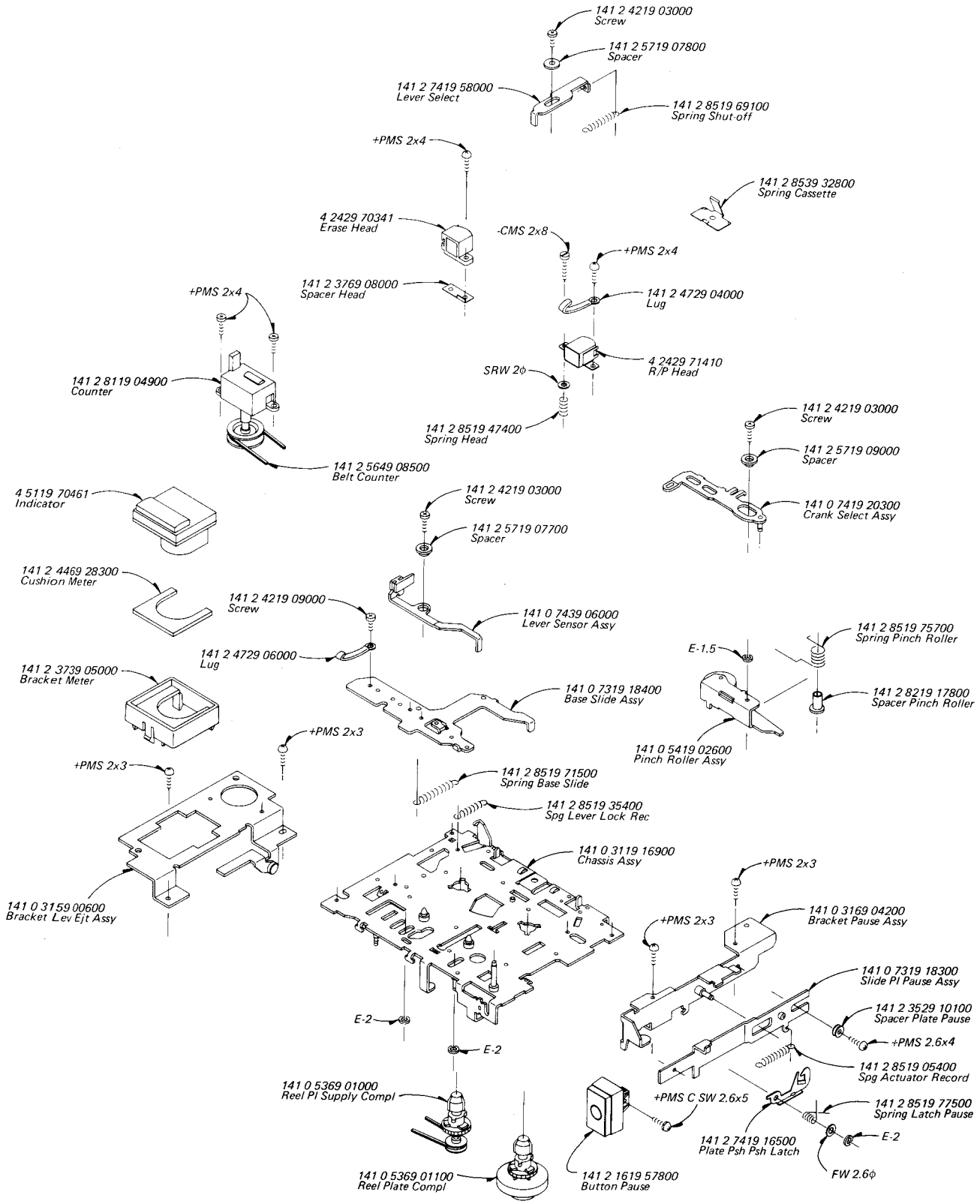
EXPLODED VIEW (Continued)

(Radio Chassis)



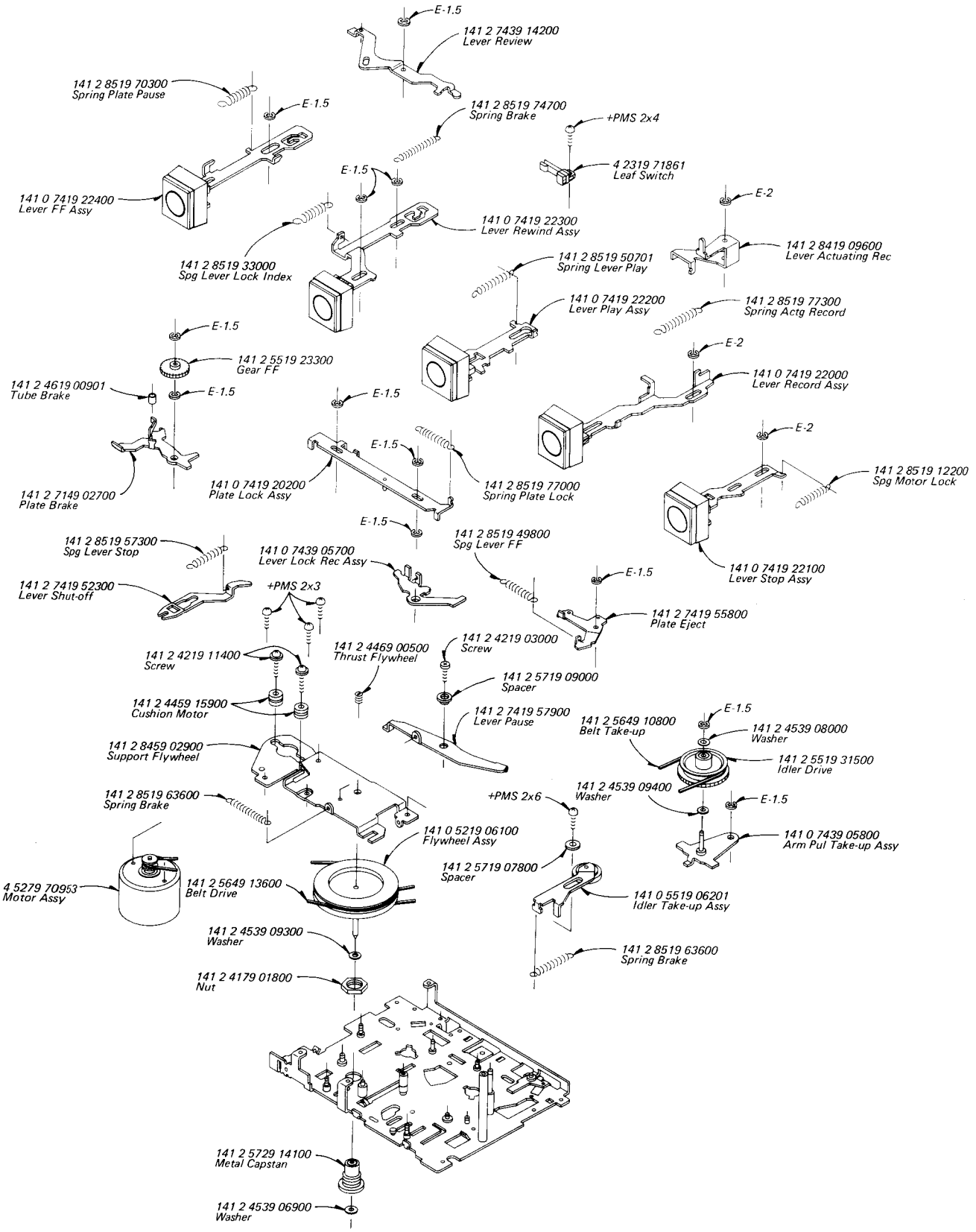
EXPLODED VIEW (Continued)

(Chassis Top)

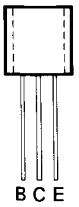
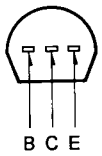
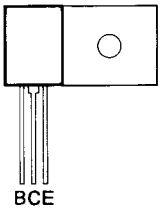
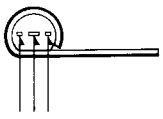


EXPLODED VIEW (Continued)

(Chassis Bottom)

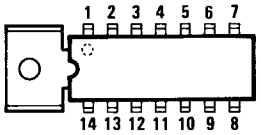


IC & TRANSISTOR LEAD IDENTIFICATION

FRONT VIEW	BOTTOM VIEW	TRANSISTOR
		2SC536 2SC693 2SC1815 2SD545
		2SB544
TERMINAL NAMES		
B⇒ BASE C⇒ COLLECTOR E⇒ EMITTER		

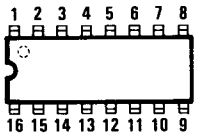
LA4135

(Bottom View)



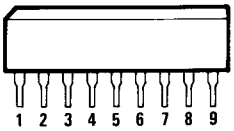
μPC1018, AN7410

(Bottom View)



TA7135P

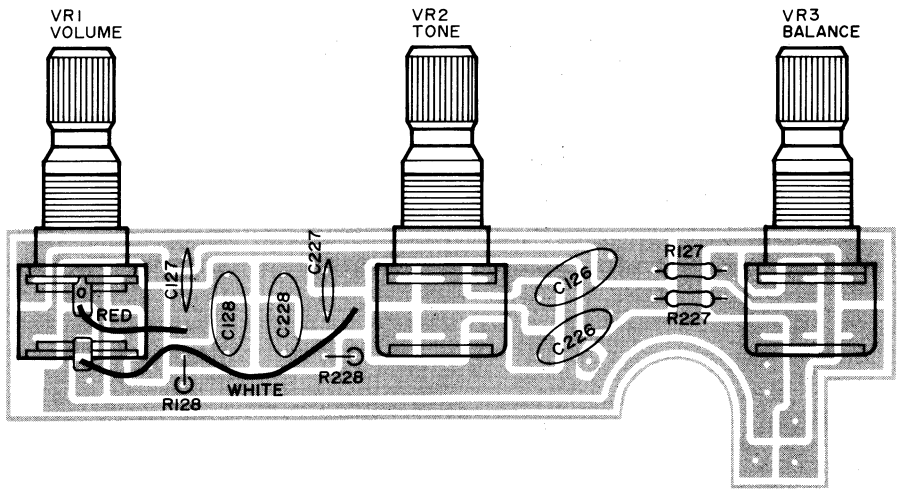
(Side View)



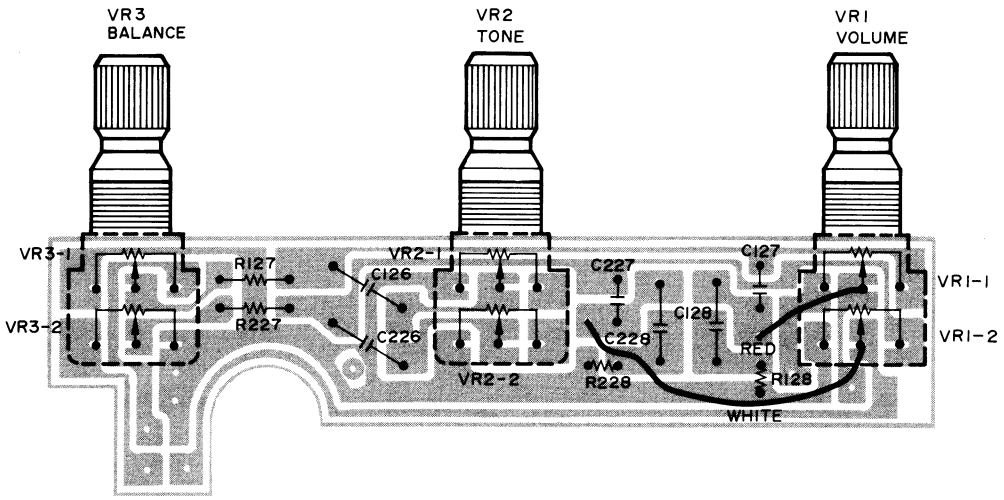
(Bottom View)

VOLUME CONTROL P.C.BOARD

(Top View)

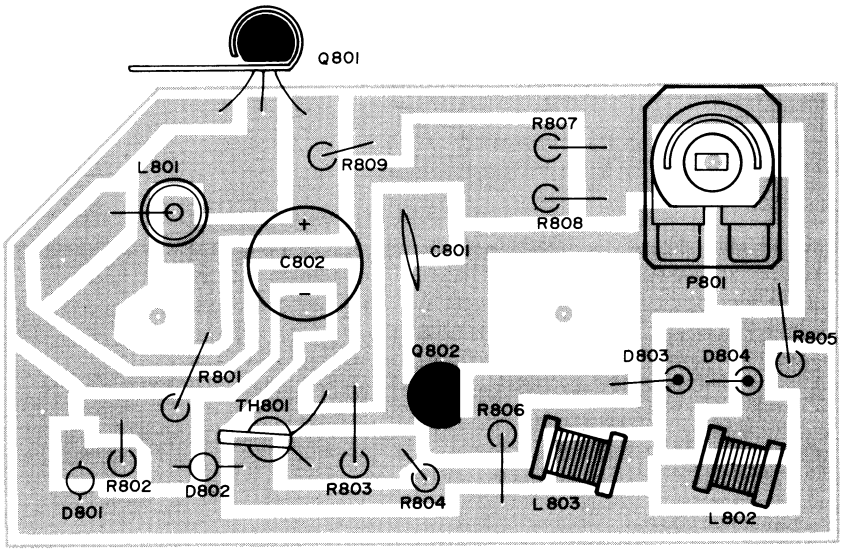


(Bottom View)

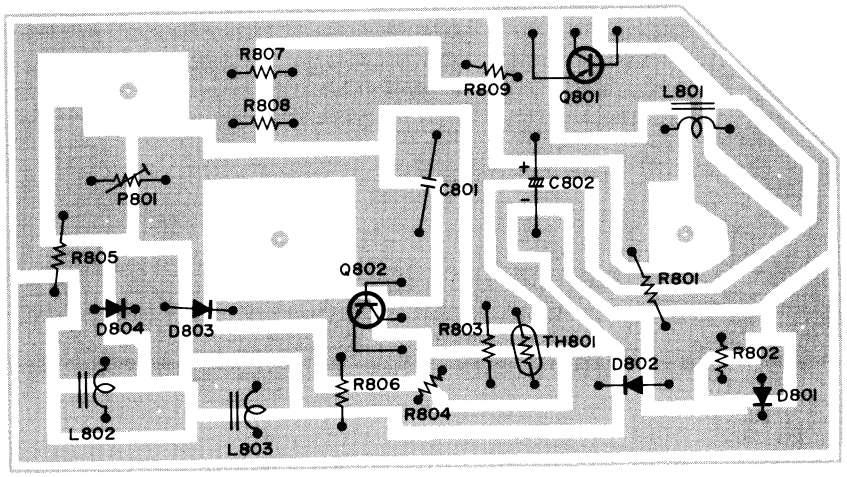


GOVERNOR P.C.BOARD

(Top View)

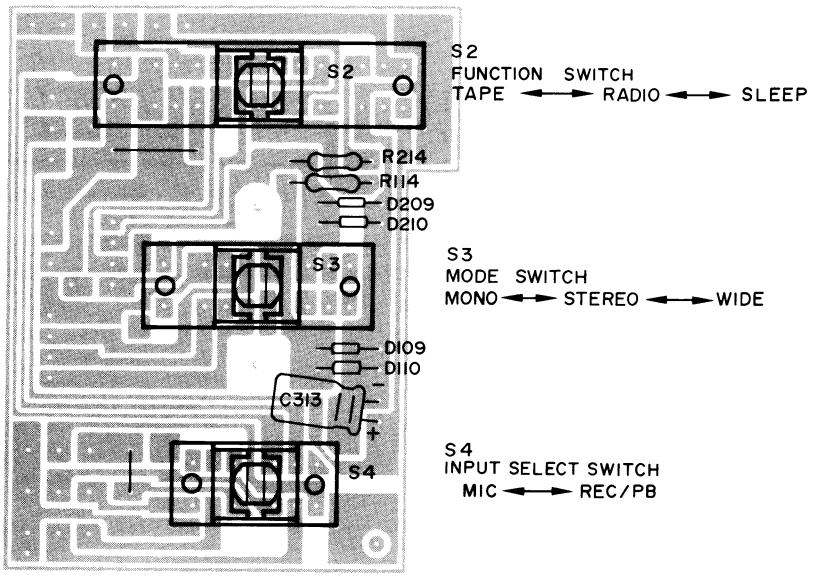


(Bottom View)

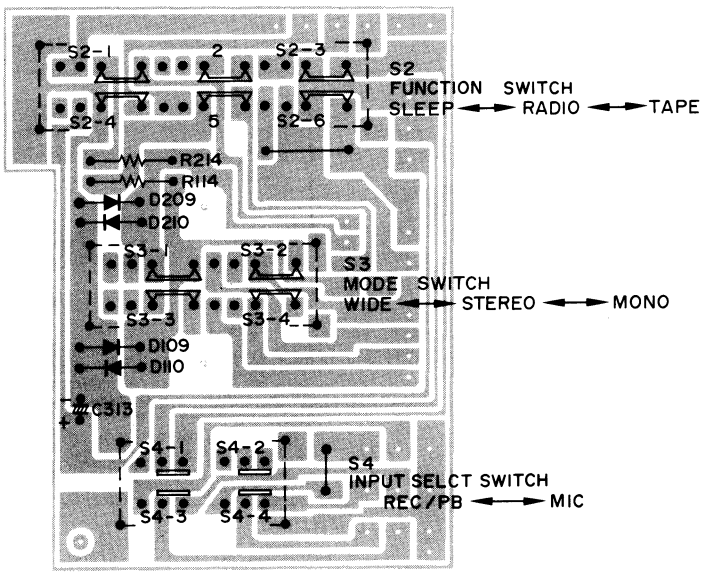


SWITCH P.C.BOARD

(Top View)

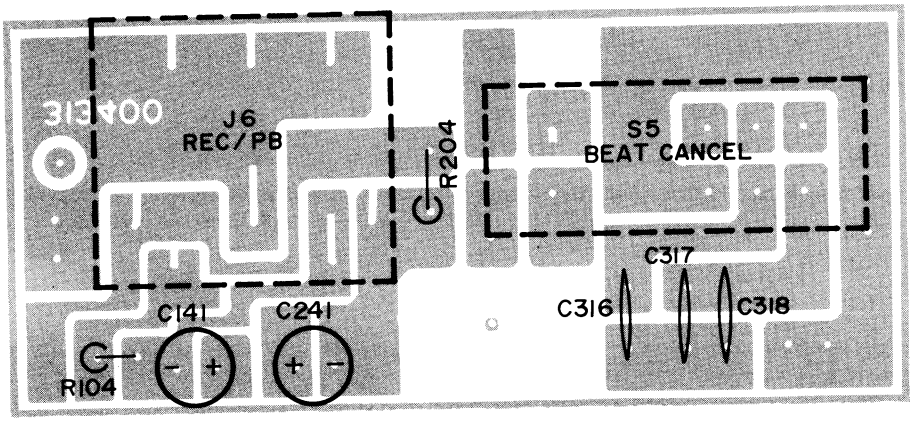


(Bottom View)

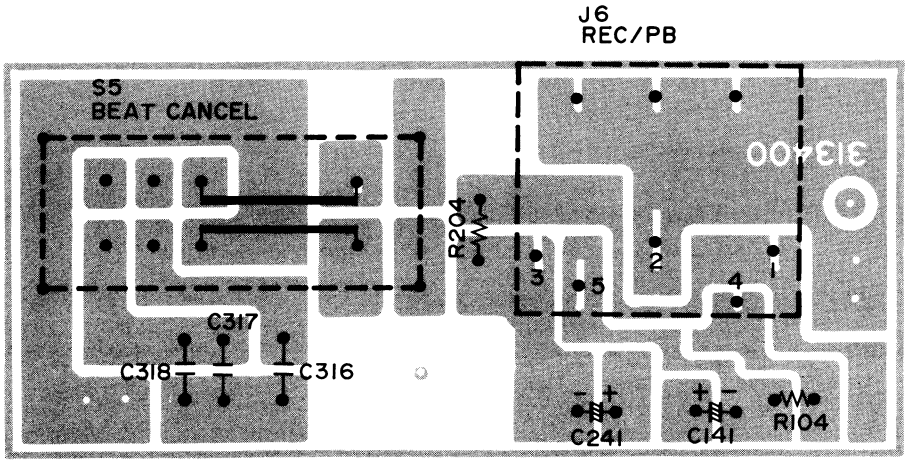


SCOKET P.C.BOARD

(Top View)

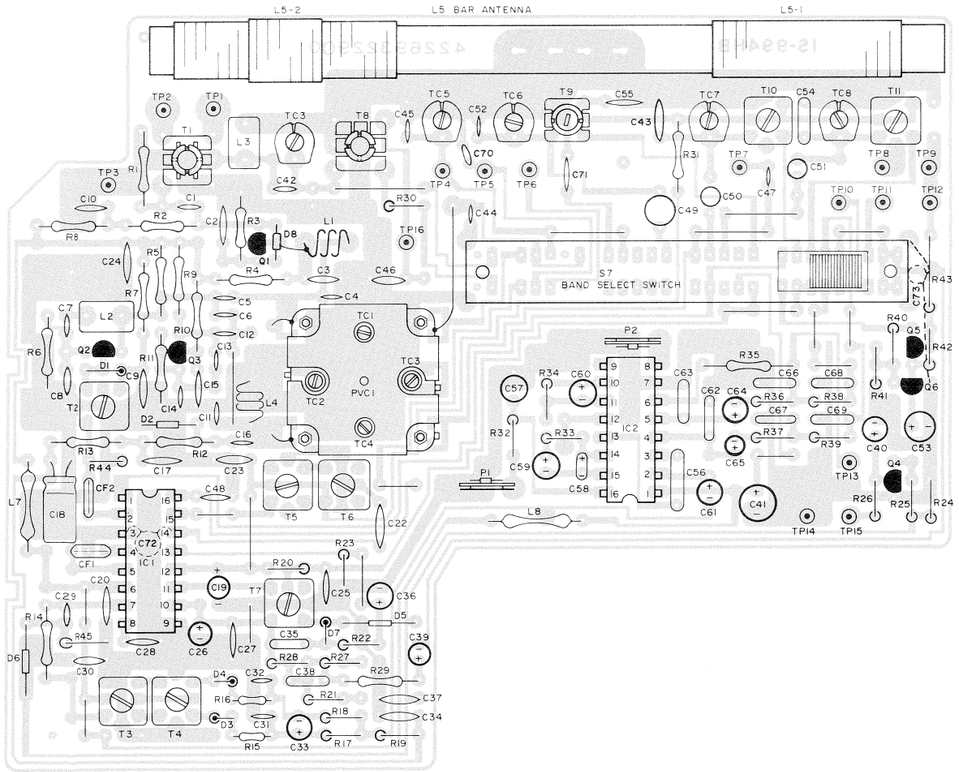


(Bottom View)

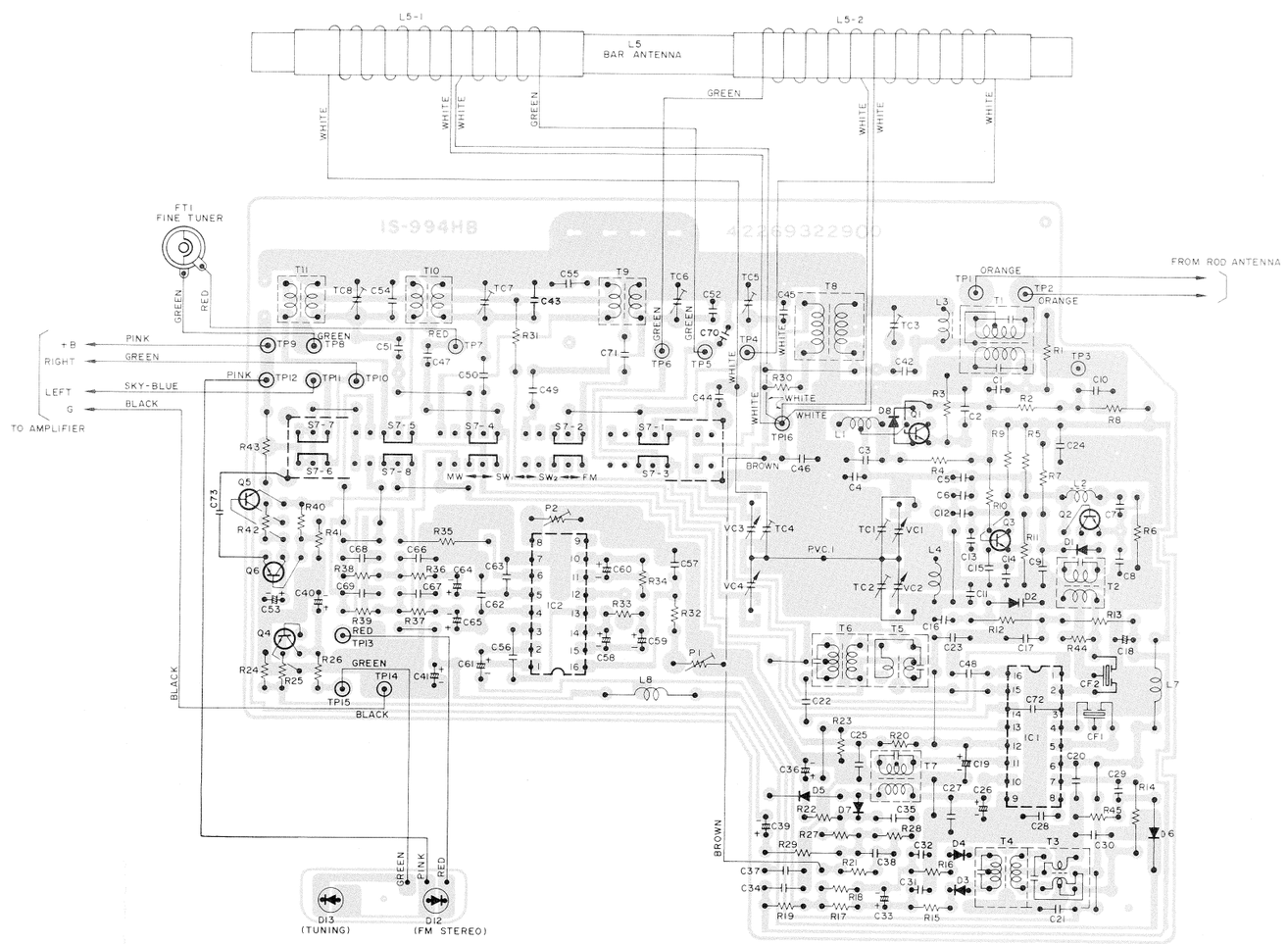


RADIO TUNER P.C.BOARD

(Top View)



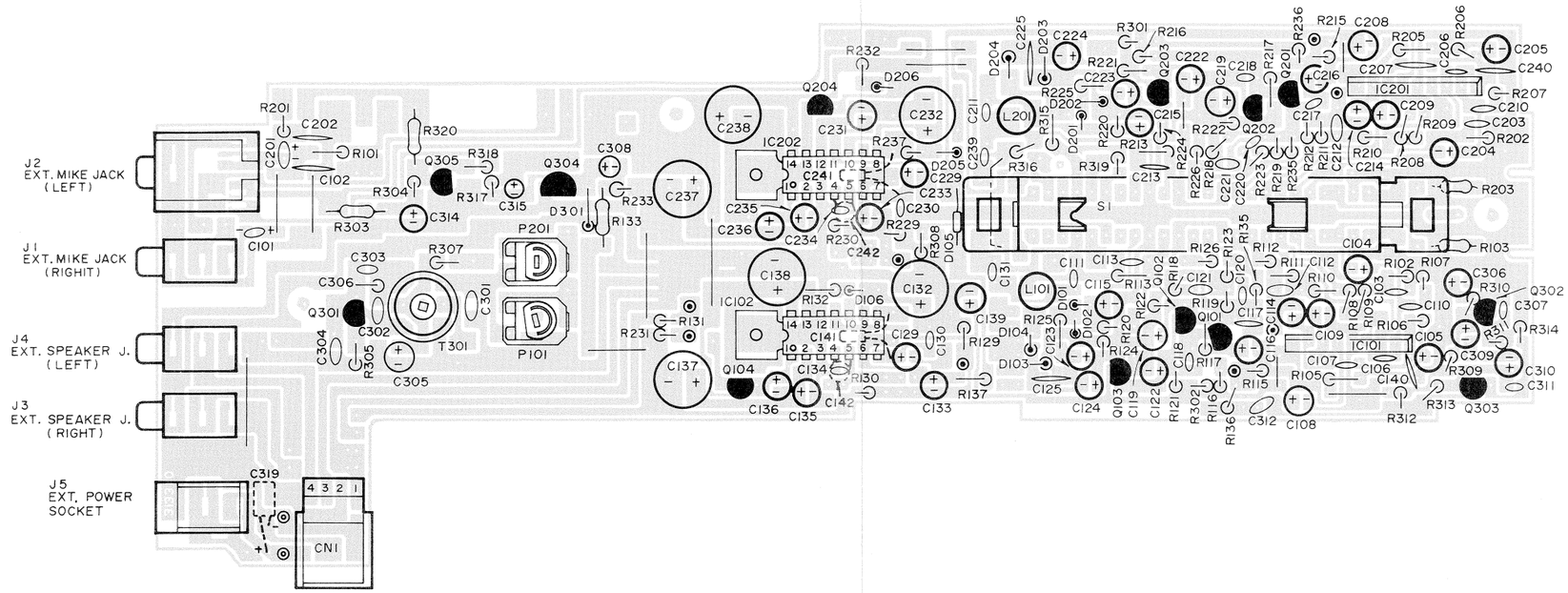
(Bottom View)



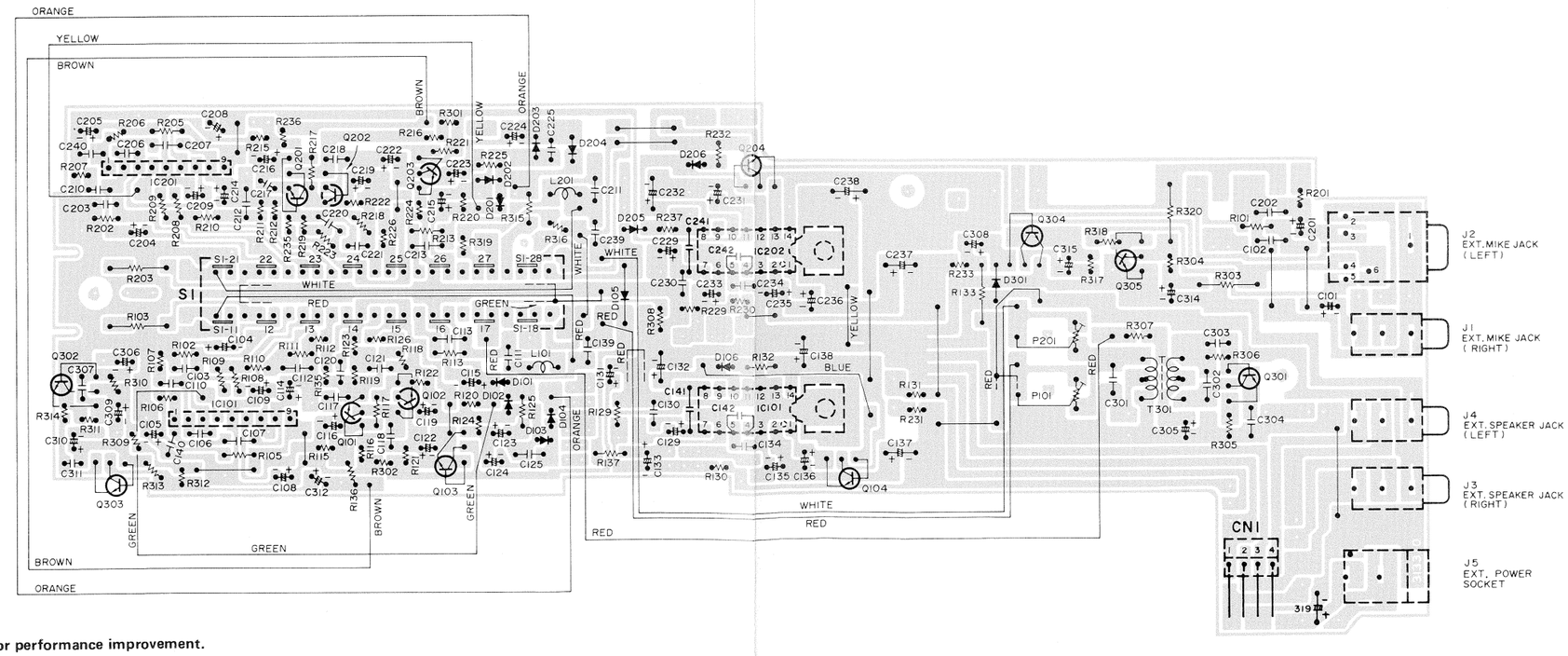
This circuit is subject to change without notice for performance improvement.

AMPLIFIER BASE P.C.BOARD

(Top View)

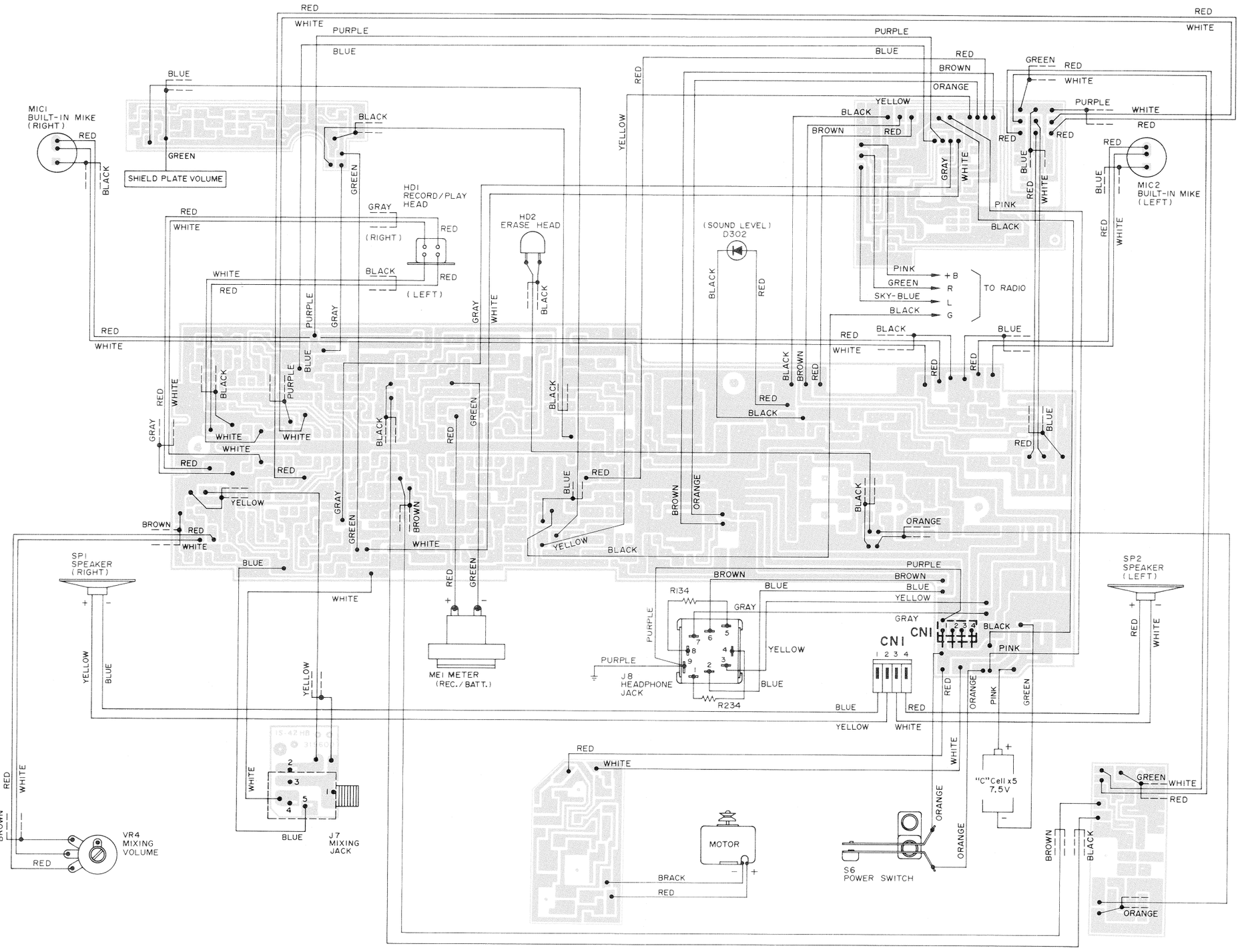


(Bottom View)



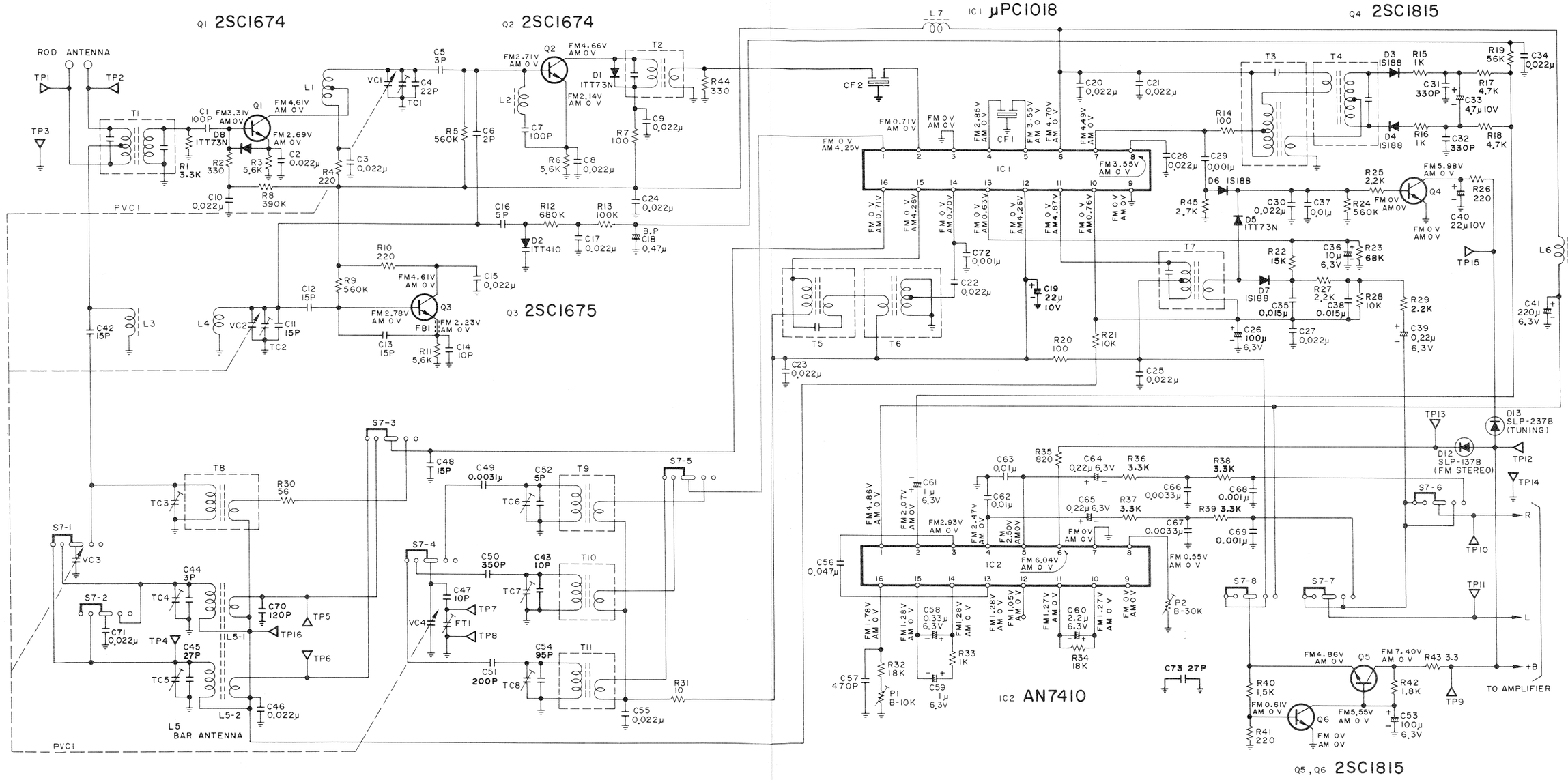
This circuit is subject to change without notice for performance improvement.

WIRING DIAGRAM (Amplifier)



This circuit is su bject to change without notice for performance improvement.

SCHEMATIC DIAGRAM(Tuner)



This circuit is subject to change without notice for performance improvement.

NOTE:
The described voltages show the values measured by the tester (Internal Resistance: 20k-ohm/V) at no signal with the function switch 1 set to "RADIO".